The Journal of the American Medical Association

VOL. XXII. CHICAGO, APRIL 14, 1894. No. 15.

LECTURE.

SOME RECENT ADVANCES IN SURGERY OF THE HEAD.[1]

A Lecture delivered before the Medical School of the United States Army, Washington, D. C., Jan. 18, 1894.

BY W. W. KEEN, M.D.

PROFESSOR OF THE PRINCIPLES OF SURGERY AND OF CLINICAL SURGERY, JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

"Gentlemen of the Army Medical School and friends:—It is a very peculiar pleasure to me to be present to-day for two reasons. One is because I feel the very greatest interest in such a medical school. Having visited a good many years ago the English Army Medical School at Netley, and observing the very great advantages that were presented for the medical officers of the Army and Navy there, I have beheld with the greatest delight the broad-minded policy which has established this school here. It is also a great delight to me to renew an old acquaintance with the President of the Faculty whose acquaintance I first made as a fellow student in Brown University. Subsequently this friendship was cemented during the war when Drs. Mitchell, Morehouse and I were associated with him in the hospital for wounds and injuries of the nervous system.

I want to say a few words in reference to some points as to two topics in connection with recent progress in intracranial surgery. Time will only allow me to speak of:

1. Those infective diseases of the brain arising from diseases of the ear.

2. Intracranial hemorrhage.

First then, infective diseases of the brain, extending sometimes even to the spinal cord, principally arising from infective diseases of the ear. These may be four in number: 1, we may have a pachymeningitis. This is generally limited to the brain, but it may extend occasionally, though rarely, to the cord. It gives rise, also, not uncommonly, to "extradural" abscess; 2, leptomeningitis, or inflammation of the soft membranes of the pia mater, which causes either a diffused inflammation or a localized "subdural" abscess; 3, abscess proper; that is abscess in the structure of the cerebrum or the cerebellum; 4, thrombosis of the sinuses, more especially in the sigmoid portion of the lateral sinus.

If any of you will examine an open skull you will notice that the petrous bone forms a water-shed between the posterior and middle fossæ of the skull, in which lie respectively the cerebellum and the temporo-sphenoidal lobe of the cerebrum. Moreover, if you will examine the petrous bone, especially in sections, you will be struck very much by the thinness of the bone, in some parts not thicker than a sheet of paper, so that by its ready caries or necrosis inflammation may easily extend from the cavity of the tympanum to the intracranial cavity. Moreover, a large number of veins pass through the bone and afford a ready path from one cavity to the other. It will be seen therefore, that these infective diseases very frequently will attack those portions either of the brain or its envelopes which lie immediately in juxtaposition with the anterior or the posterior surface of this petrous bone. Given then, this easy mode of access, what is the ordinary course of such a disease? It is important to remember that these diseases of the brain very rarely arise from acute middle ear disease; they are almost invariably the result of chronic otitis media. They are occasionally the result of disease of the nasal cavities or of the soft parts of the face; but in ninety-five cases out of one hundred, perhaps, they arise from infective disease of the middle ear.

First of all, if such a suppurating otitis media has produced caries or necrosis, the process naturally extends to the dura mater and a pachymeningitis results. Fortunately in the majority of cases this is a localized inflammation producing either a slight layer of pus between the dura and the bone, or a considerable layer amounting, in fact, to an extradural abscess. The course of such an abscess varies. Sometimes, though rarely, a spontaneous cure results. If so the pus accumulates between the dura and the squamous portion of the temporal bone and the bone being very thin here (for you see it is translucent), it bores its way through the squamous portion and in this manner obtains an exit.

I have here two photographs, from a case in which I assisted Dr. MacCuen Smith in the Jefferson College Hospital, which well illustrate two different stages in the course of such a disease. The first shows the large incision that was made, the ear falling downward and forward to such an extent that it seemed impossible for it ever to regain its normal position, and the extensive removal of the bone. The large incision especially forward was required to obtain access to the aperture in the squamous bone by which the pus had escaped from the cavity of the skull,—an aperture through which the pulsating dura was easily seen. The second shows very well indeed that the ear has been practically, permanently restored to its proper position. The patient recovered without a bad symptom.

2. Instead of limiting its ravages to the hard membranes of the brain, it may produce a leptomeningitis, which will be followed either by diffusion of pus upon the surface of the brain extending even to the cord occasionally, or it may accumulate at one point thus producing a subdural abscess.

3. Instead of limiting itself to the exterior of the brain it may attack the interior and, strange to say, in not a few cases there will be an inch or even more than an inch of apparently perfectly healthy brain between the petrous bone and the abscess.

[1] Stenographically reported for the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Now as to the symptoms of these various lesions. I need scarcely detain you with these because I am not speaking to a body of students hearing this for the first time, but to gentlemen who are familiar with most of the diseases I describe and the means of diagnosis. It is more especially to the matter of treatment that I wish to call your attention, though incidentally I will say a word or two in reference to symptoms. Abscesses external to the brain, extradural and subdural abscesses, are very apt to be associated, as are abscesses elsewhere, with elevation of temperature. You will have a temperature of 101, 102 or 103 degrees with the ordinary signs of intracranial inflammation, such as mental dullness, intense headache, and in some instances valuable localizing symptoms; but in contra-distinction to this,—and it is especially to this one point I want to call your attention, for we may make great mistakes in diagnosis,—in intracerebral abscesses, and not uncommonly in cerebellar cases, you will have a temperature either normal or subnormal. There may be a slight initial rise and then a fall to the normal or even below. Therefore, in any case of chronic ear disease in which when the discharge ceases intense headache and mental dullness comes on and a depressed or normal temperature occurs, especially if to these be added any localizing symptoms, you may be almost certain that you will have to deal with an intracerebral abscess. Now, what is the proper treatment for all three of these, because they may be grouped together very well in the matter of treatment? The first thing to do is to open the mastoid antrum, and, if need be, the mastoid cells, to search for the abscess in the cerebrum or cerebellum. Where will you open the mastoid antrum? You will notice that at the upper part, the base of the mastoid, lies the mastoid antrum. Between it and the apex there may be developed a certain number of spaces known as the mastoid cells. The mastoid antrum is the part you want to aim for: 1, because it has a direct connection with the middle ear and therefore will be the first part invaded by the pus; and 2, because from it you can readily reach the cells which will often be filled with pus. This pus is loaded with microörganisms of the most virulent kind even when there is no odor to the discharge; and this point is important in the matter of diagnosis. It is not the discharges which have bad odors that are necessarily fatal; those in which there is almost no odor are often more dangerous than those which are very foul.

In a capital book just issued, entitled, "Pyogenic Infective Diseases of the Brain and Spinal Cord," Dr. Macewen, of Glasgow, has called attention to a little anatomic point in connection with the anatomy of the temporal bone, viz.: The suprameatal triangle. Its boundaries are the root of the zygomatic process above, the posterior border of the meatus in front and a line joining the two behind. The value of the suprameatal triangle is two-fold. Just at the base of the triangle lies the antrum, and therefore, if you perforate at that point you will reach the mastoid antrum. The second point of value of the triangle is that the sigmoid portion of the lateral sinus always lies back of it and is therefore out of danger. Moreover, if, back of the triangle, you draw a line parallel to its posterior border from the posterior inferior angle of the parietal bone to the apex of the mastoid process; this line will correspond to the axis of the sigmoid portion of the lateral sinus, or as it is better called the "sigmoid sinus." These bony points can always be recognized when exposed in an operation. The axis of the lateral sinus proper is a line drawn from the junction of the mastoid parietal and occipital bones to the middle of the meatus. To perforate into the mastoid antrum, I very frequently use the ordinary carpenter's counter-sink. Macewen recommends the rotating burr with the ordinary surgical engine, such as dentists use. He very properly, I think, condemns the use of chisel and mallet, for the reason not only that the blows of the mallet produce a disturbance within the skull that might diffuse the pus and do harm to a diseased brain, but because, in more than one instance the chisel has been driven wider and deeper than was intended and has wounded even the lateral sinus. He refers to four such cases, in three of which death occurred. Either the burr or the gouge, rarely the trephine, still more rarely the chisel should be used. The external incision is from the base to the apex of the mastoid directly down to the bone, the ear is then drawn forward and the antrum perforated in the suprameatal triangle. But you must beware of two points of danger. The first is that already alluded to, viz.: The lateral sinus. When operating in the cavity of the antrum you discover any little mass of granulations it is of the greatest importance before touching it with burr or gouge that you investigate it by means of a probe to see whether or not there is a perforation exposing the sinus,—because not uncommonly there is already a perforation from the mastoid antrum into the groove for the sigmoid sinus, and if you rudely destroy this you may very easily puncture the sinus and place yourself in a very embarrassing position. Then, you must be extremely careful to cleanse the antrum and to stanch the blood, so that you can see the next source of danger, viz.: The canal of Fallopius, in which runs the seventh or facial nerve. This runs just underneath the further part of the floor of the mastoid antrum. You must be careful, therefore, if you espy the little ridge which often marks the line of the canal, to avoid puncturing it lest you injure or destroy the seventh nerve and so paralyze the face. If this ridge is not visible there is another means of avoiding the seventh nerve. Expose the face and have one of your assistants watch its muscles. If your burr or gouge approaches the nerve you will produce a twitching of the face, and that, on a warning from your assistant, should be the signal for you to stop. Having opened the antrum, how will you cleanse it? Merely to wash it out as I have seen it done is most inefficient. And more than this,—when we do inefficient operations we simply expose our patient to greater danger, for this reason, that the microörganisms of the inspissated pus of the antrum are shut up and inert; but they are ready to reënter upon a vigorous and baleful life if you give them blood, blood serum and plenty of oxygen. So long as they are confined they will do little harm; but break down the barrier of granulating tissue which, like a wall of defense shuts them off and you open the door for their infective influences. Hence the rule should be thoroughness or don't touch it at all. Therefore after smoothing off the interior of the antrum and cells, take small bits of gauze or sponge and wipe out the cavity with your antiseptic solutions thoroughly and completely. Thoroughness, and thorough drainage afterward, are essential to success.

Supposing now that you find you have to deal with more than a mere mastoid case; that the brain is involved either from an extradural abscess, a subdural abscess or it may be even an abscess in the brain itself, you will naturally do one of two things: Either enlarge the opening already made and so get access to the deeper abscess, or else make an independent opening. As a general rule the latter is the better course to pursue. In doing so the best point for the trephine opening is that indicated by Barker, viz.: One and a quarter inches behind and one and a quarter inches above the middle of the external meatus, because the vast majority of abscesses of the brain will lie within what Mr. Barker has well called, "the dangerous area," which is a circle having a radius of an inch and a quarter, and for its center the point I have mentioned. The trephine opening should not be a large one—a half-inch is all that is usually needed. In many cerebral operations large openings, one and a half or two inches, or sometimes even larger than that are needed; but in abscess of the brain, a small opening only large enough to give access, is all that is necessary. Whenever the brain substance is lacerated there is always a tendency to the formation of a fungus cerebri—a most dangerous complication. Hence my caution in this respect.

I am quite persuaded that in a case of infective disease of this sort, in a young lad at Jefferson College Hospital, I lately made just this mistake myself; and a very natural one it was I am sure. Fortunately no ultimate evil resulted from it. The boy last 4th of July went in swimming, and in diving got a quantity of cold water in his nostril. This produced an invasion of the frontal sinus. The boy entered a hospital soon after, toward the end of July, and had a little abscess opened over the eyebrow and was soon discharged from the hospital as well. Not long after this, great headache and mental dullness came on but without any rise in his temperature. He entered the Jefferson Hospital and I diagnosticated abscess in the frontal lobe. The diagnosis was facilitated in this case and made very certain by the fact that just over the eyebrow was a soft swelling. The moment an incision was made and the parts raised, I found a small aperture already existing in the skull. The dura was protruding through the little opening which was surrounded by an area of necrosed bone. The bone was not yet loose. Then followed my mistake. I should have been content with that small opening, through which I could perfectly well have reached the abscess; but the tendency is whenever we see dead bone, to get rid of it, and I took my forceps and cut away the bone until I had an aperture about an inch and a half in diameter. Through this I introduced a grooved director and at a depth of two inches I reached the abscess. He was a different boy in twenty-four hours; clear in mind and free from headache. From that time to this he has gone on improving and I hope before long will be entirely well, except that his sight, I fear, will be nearly lost from atrophy of the optic nerves following optic neuritis. But the result of removing so much bone was that it was followed by fungus cerebri. This has gradually healed over but there is still some dead bone to come away. Now, had I let the bone alone I could have reached the abscess and have put my drainage tube in. There would have been no such opening through which a fungus cerebri would have protruded, and the dead bone would have come away just as it is going to come away now.

Make therefore a small opening not over half an inch in diameter. If there is neither an extradural nor a subdural abscess, the abscess will be usually at one of two points, either in the temporo-sphenoidal lobe which occupies the middle fossa of the skull, or in the cerebellum.

How will you reach such abscesses? The first can be reached by puncture in the axis of the temporo-sphenoidal lobe, that is in a line from the opening towards the wing of the opposite nostril. This is far more exact than the direction generally given to puncture in a direction "downward, forward and inward." As a rule I use the director, the groove of which facilitates the escape of the pus and its blunt point avoids any vessels. I do not like the knife; it may wound a large vessel difficult to control especially with a small opening. Suppose you do not find the abscess. Withdraw your probe exactly in the line in which you introduced it, and pass it in another direction. Never sweep it round, for if you do you cut off large numbers of fibers in the substance of the brain. Do as little harm as you can.

Having explored sufficiently and ineffectually, leave that point and go to the cerebellum. It may be very possibly, that you will look on your patient and say: "I wonder if his condition will bear it?" I remember well a case of this kind. The child was in such a condition that I decided not to do a second operation; and what was the result? The child died; and I found an abscess in the cerebellum containing one and a half or two ounces of pus. The child could not have lived, even if I had found the abscess; but surgically it was none the less a mistake. The additional danger of a second slight operation, for it is really a slight operation to expose and puncture the cerebellum, is as nothing compared with the absolute certainty of death if the abscess be not found.

To attack the cerebellum with safety you must avoid the lateral sinus. This runs in a line drawn from the meatus to the external occipital protuberance. The trephine should therefore be applied well below this line and midway between the mastoid and the middle line. A few turns of the trephine will penetrate the bone, or, if the patient is a child, a simple gouge will quickly make an opening. Through this you can not only puncture the cerebellum on the same side but by an oblique puncture can reach the opposite lobe. Having found the abscess it is evacuated and then drained, the after treatment being that with which you are all familiar.

This whole matter of cerebral abscesses is very recent, especially in connection with cerebral localization, which I have not touched on but shall presently in connection with hemorrhage. So late as in 1886 the first case of cerebral abscess was diagnosticated and properly treated. You see therefore, how recent all of this surgery is; eight years covers practically the whole of it.

There may be, however, a fourth result, viz.: Thrombosis of the lateral sinus, especially the sigmoid sinus. This disorder is frequently misinterpreted or overlooked, and patients are allowed to die when they might be saved. What, first, is the reason for this condition? Why, nothing is easier you see than to pass through the thin lamella of bone which separates the petrous bone from the sigmoid sinus.

There is nothing easier than here, inside of the ear, to have necrosis, with infective invasion from this through the veins into the sigmoid sinus. It is common to find pus in the sigmoid groove, not uncommon to find it in the sinus itself in cases of thrombosis. The evil unfortunately is not restricted to the sigmoid sinus. The disease comes in contact not only directly with the current of the blood from the sinus into the jugular vein, but may pass all the way down this vein to the clavicle. More than this, fragments of the thrombus may be carried down or the thrombosis be extended until the lungs become involved. You will have then, first, expectoration, later, in twenty-four or forty-eight hours, discolored by the admixture of pus. When it extends as far as the lungs it is deadly. I know of only one case of such extension in which recovery was achieved; and that one case of recovery, in an infective disease of this kind is an extraordinary thing.

That sinus thrombosis, which formerly was considered so fatal, is not so fatal as it was supposed to be, is proved by the fact that I have gathered from different surgeons thirty-two cases that have been operated upon, of which nineteen recovered and only thirteen died. You will find in Dr. Macewen's book, thrombosis of the longitudinal sinus, of the cavernous sinus and of the sigmoid sinus. He mentions twenty-seven cases in his own practice of which twenty were treated and sixteen recovered. More than this, thrombosis of the sigmoid sinus was formerly thought to be absolutely inaccessible and absolutely fatal. Of the cases of thrombosis of the sigmoid sinus in his practice, there were eighteen cases, of which seventeen came to operation and thirteen recovered.

Now what are the symptoms of thrombosis of the sigmoid sinus and what should be its treatment? First of all you will have a patient with an old otorrhea, from chronic disease of the middle ear. It is very common, especially of late, to think that a chronic disease of the middle ear does not amount to anything. This may be true in a great many cases, but we know now far better than to think it true in all. Such a case may go on for fifteen or twenty years but the day of reckoning may at last come, and when it does come it comes like a whirlwind.

Take a case of old otorrhea. The discharge will stop and your patient will complain of headache. The headache is intense. Along with it will not come that dulling of the intellect as in cases of abscess; but on the contrary the intellect will be clear and you will find that there is post-mastoid tenderness even in the bone, though no tenderness in the mastoid process itself. Follow the line of the sinus from the mastoid back, and the post-mastoid tenderness will almost always be found. Now examine the neck, and if you have a case in which the extension of the clot has been intrajugular, you will feel a hard cord just posterior to the carotid artery or you will find a matting of all the tissues, because not uncommonly there is inflammation around the jugular vein and carotid artery. If there has been any escape of pus externally you will have it in the suprameatal triangle. You will expect also other symptoms. What is this but a pyemia? We know perfectly well that the common cause of a pyemic condition is an infective clot that forms in a vein; and what is this but an infective clot in a large vein, peculiarly situated and unfortunately, to us peculiarly inaccessible.

You will expect, with the symptoms I have indicated, that the temperature will go up. There will be violent fluctuations of temperature; high at night and comparatively low in the morning, but only comparatively. Given, then, these conditions, you will be pretty sure that you have to deal with sinus thrombosis. First of all the mastoid operation. Sometimes you will have just these symptoms without any thrombosis, simply from the mastoid disease, but unfortunately this is rare. When it exists, if you see no reason to go further than the simple mastoid operation, stop there, but watch your patient. Stand over him with knife in hand ready instantly to interfere. A few hours may carry that patient just beyond the safety line into absolute danger and death. Watch carefully, and unless he is better within twenty-four or forty-eight hours do the second operation, viz.: expose the sinus.

I have already told you of the lines that mark the suprameatal triangle. You will carry your incision down here as before. It will have already been made and you will simply have to re-open your old incision. It is sometimes necessary to make the incision posteriorly. Examine most carefully the little mastoid vein that runs in the sinus between the squamous and the occipital bone. Always examine this vein that makes its entrance here into the sinus, because if there is pus in the groove of the sinus very likely you will find it working its way out along the length of the vein and you will see a small portion of a drop of pus at this point. Then from your old incision work backward and upward. You will observe that you have punctured the antrum there. You will then work upward and backward and uncover one inch of the lateral sigmoid sinus. This is easily done. There is not a man in this room who can not do this operation if he will be gentle and careful.

Your gouge and your sharp spoon, or Rozier forceps, will enable you to uncover the sinus entirely. See whether it is hard or soft; see what is its color. This will likely give you all the information you want as to whether or not you have a clot. If you have reason to suspect clot, or if the symptoms, even without clot, are such as to justify it, you must open the sinus. You say to me at once: "That will give a fearful hemorrhage and expose the patient to the greatest danger of death." There is nothing outside the sinus as dangerous as the pus inside. There is nothing outside of it or that you can do outside of it that can possibly be as dangerous as the infection that will be carried from suppurating sinus down to the lungs. Therefore do not hesitate, for you can do it with perfect safety.

Have beside you in that case two or three strips of iodoform gauze and a pair of forceps immediately alongside of them. Make your incision and if blood comes out there is no clot; your finger will be a sufficient plug. If you find no clot you can plug perfectly well and prevent a clot extending further backward at least. Supposing you find a clot then you will have no bleeding, for a clot acts as a cork or plug. What will you do then? Clean it out until you get free hemorrhage. You will find cases reported in which the sinus was cleaned out and in which even a slough of the sinus escaped afterward and the patient got well. If you are going to interfere at all your interference must be thorough.

Having opened the sinus, cleaned it out, and

plugged it, what then? If the jugular vein is involved you must make an incision instantly in the neck and open that vein. Tie it between two ligatures, or tie one ligature only because often one end is entirely plugged by clot. In some cases that I did some years ago this vein was entirely destroyed and I had the greatest difficulty in defining it. It was collapsed entirely and surrounded by an immense amount of inflammatory tissue. Tie the vein, especially go below the clot. Go down below the level of the clavicle and tie below the clot in order to prevent its extension toward the lung; there is the great danger. Having done so, wash it out with an antiseptic solution, plug it with iodoform gauze, and you will get, in a large majority of cases a most satisfactory result.

I had not expected to take up so much time with this; but I always feel that in such matters there is a sort of modern surgical romance, and when one gets to talking upon a subject to which he is much attached it runs away with him.

I will only have a very few minutes, therefore, to say a few words in reference to the important matter of cerebral hemorrhage and at the close I will show you the means of detecting a bullet by Dr. Girdner's telephone probe.

As in matters of abscess there are three positions in which hemorrhage may occur in the cranium. It may occur between the dura and the skull,—extradural hemorrhage, corresponding to extradural abscess; under the dura, between it and the brain,—subdural hemorrhage; in the brain, more frequently in the cerebrum than in the cerebellum, making cerebral hemorrhage.

Extradural hemorrhage is due in the vast majority of cases, one may say almost without exception, to rupture of the middle meningeal artery. Now to show what a fatal disease this is: In a paper published a little while ago by Giesin he states that he collected 147 cases that were not operated on, and 131 or 89 per cent. of these died. Of 110 cases operated on, 36 died, a mortality of 33 per cent. Nothing could speak more strongly than these figures.

The middle meningeal artery comes up, as you know, through the foramen spinosum and soon divides into an anterior and posterior branch. A man falls or receives a blow on the head. He is stunned by it. In the course of a minute or five minutes, it may be half an hour, he comes to himself; there may be only a few seconds of unconsciousness. He comes to himself but unfortunately the artery has been ruptured. What happens then? While he is conscious, a little leakage of blood, which goes on increasing. After a while, or if the rent is a large one, in a short time you will have extravasation of blood with the formation of a clot. The moment that this clot becomes large enough to produce symptoms of compression the man will become unconscious, and this unconsciousness will deepen into coma, and finally into death. This symptom is the one worth all the others. It behooves you therefore, in cases of injury of the head in which there is any suspicion of intracranial hemorrhage, to investigate the witnesses. The patient himself will be unconscious, but investigate the witnesses to see whether he had a stunning, secondly, a recovery of consciousness, and then a recurrence of coma; and if he had, and other symptoms go along with it, your diagnosis is an assured one.

What will be the symptoms? In the first place the patient's pulse will be accelerated. In the next place his temperature will not rise remarkably. It takes time, but it will rise later. Next, the pupil on one side, the side of the clot, will be dilated, and if the clot has gone downward to the base of the brain it may be that preceding the second unconsciousness you will have anesthesia. More than this as it creeps up from this or from the centers along the fissure of Rolando, you will get first the face paralyzed, then the arm, and, if it extends widely enough, the leg.

I remember a case of gunshot wound reported some time since in which this very progressive history occurred. By the time the ambulance reached the patient the ambulance surgeon found that his face was paralyzed, and in a short time the arm. By the time the hospital was reached his leg was paralyzed, and he was unconscious. Now there could be nothing, no cause that would be progressive, and rapidly progressive—there would be no possible pathologic cause for such conditions, excepting hemorrhage.

I remember a case I had two years ago at St. Agnes' Hospital in which the diagnosis hung by a more slender thread. A man going to his stable about 6 o'clock in the morning, lost his footing on the top of a haymow and fell directly to the stable floor, striking on the top of his head and inflicting two slight wounds in the scalp, one in the middle and the other a little way from it. He was picked up unconscious and was absolutely unconscious from the moment he was found, apparently until he reached the Hospital and I saw him at about half past seven o'clock. As I looked at him there, he lay extended on the couch, perfectly motionless, with the ordinary stertorous breathing and hot perspiration that you find in a case of ordinary concussion of the brain. There was absolutely nothing to indicate to me where the damage was, or even what it was. No anesthetic was necessary, and I first made a little incision from each of the wounds to determine if there was a fracture, but found none. What then could account for this man's comatose condition? There was only one thing and that was a large clot, because it was too sudden, too profound, to originate in a little rupture. It must be a source of the greatest compression that would produce such profound coma. Then came the question as to which side it was on. He had no hemiplegia, but absolute paralysis, except the muscles of respiration. I examined the eyes and found that he had on the left side a slightly more dilated and less mobile pupil than on the right. I then thought that in all probability there was a clot on the left side of the man's brain, and I need scarcely tell you the satisfaction I had when I removed a half inch button of bone from that man's temple. The instant the bone came away there was a clot welling up, and I found a clot inside of his head that was one and one-half times the size of my first. I found four rents in the artery, and it is needless to say that in a case of that kind the damage done to the brain by the primary injury was such that it was impossible for him to survive. I quote this case merely as one instructive in diagnosis.

Where will you trephine? Not by the symptoms of injury, but according to the doctrines of cerebral localization. If it is a blow on the posterior part of the occiput by falling backward, and the patient has the right side paralyzed, hemiplegia, or his right arm alone is paralyzed, monoplegia, will you trephine on

the side of the injury? Never. Trephine over the left motor area. Trephine by the doctrines of cerebral localization.

Three or four weeks ago a woman who had been subject to attacks of vertigo, was going up stairs and suddenly cried out for help as she fell over backward; she was taken up unconscious, not completely so but semi-conscious. Dr. Cross, when examining her pupils, found this one little peculiarity, which was a beautiful instance of exact observation: When he took a candle and passed it to the left, the woman followed it with her eyes, but when he passed the candle to the right she paid absolutely no attention to it. He judged, therefore, that the right field was blind. Now, blindness of the right field, from the crossing of the optic fibers, means injury of the left side.

I did no operation, because when I saw the woman, three days after the accident, she was dying and in fact lived only a few minutes after I saw her. The postmortem examination showed that the fibers between the left cuneus and the eye were caught by a blood clot, and, therefore, if I had made my trephine opening as I had intended I would have come directly upon it. To this point I want particularly to call your attention. The evidence at the time was that the woman struck on the right occiput. There was a place where she winced when you touched it, and in her unconsciousness carried her hand to the point, and had we operated by the doctrines of the locality of the injury we should have been far afield and would never have found the clot, for it was on the side opposite to that which received the injury.

Only one word, gentlemen, and I am done. Middle cerebral hemorrhage, which will be commonly a subdural clot, can not be distinguished from meningeal clot, and it is not necessary that it should, for the treatment is precisely the same. Apoplectic clots in the brain must necessarily be let alone; but if the clots be traumatic they may sometimes, as in the case just narrated, be accessible.

I wish to call attention to two points: How to reach the anterior branch and the posterior branch of the middle meningeal artery. The anterior branch finally reaches, as you know, that anterior inferior angle of parietal bone where it is situated in a groove or canal. Take one inch and a quarter behind the external angular process on a level with the eyebrow, and open at that point, and you will almost certainly come on the anterior branch. If you do not find the clot there, are you going to fold your hands and say: "I can not find the clot," and let the patient die. This was done in a good many cases of the 110 of which 36 died. The clot was not found and the patient died. Never let a patient die hereafter from intracranial clot any more than from intracranial abscess. The posterior branch is just below the parietal boss, at the same level as before. There is the parietal boss, a point very easily found, and just below it, on a level with the eyebrow, will be found the posterior branch. Having found the clot, drain it, wash it out, secure the bleeding vessels, and then ordinary care for such a case is all that is necessary.

I am greatly obliged for your patience on which I have trespassed much more than I intended; my excuse must be the importance of the subject.

Blank Applications for membership in the ASSOCIATION at the JOURNAL office.

ORIGINAL ARTICLES.

CAN TYPHOID FEVER BE ABORTED?

Third paper read before the Mahoning County, Ohio, Medical Society, March 12, 1894, with the Records of the Reported Cases Continued to Date of Recovery; also of three other Members of the Family who were attacked after the Reading of this Paper.

BY J. E. WOODBRIDGE, M.D.
YOUNGSTOWN, OHIO.

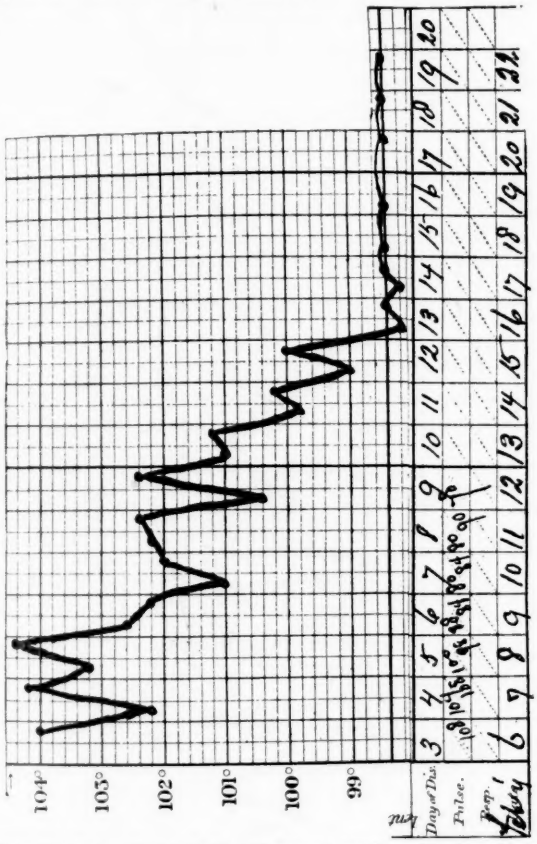
As a preface to my paper, I wish to acknowledge my indebtedness to the President of this Society, to our last ex-President, to the ex-President of the Ohio State Medical Society present, to Dr. Thomas, Dr. Barnes, Dr. Dickson and all others who have confirmed my diagnoses, watched the results of treatment, or in any way have aided me in my work; and to thank them for their very complimentary remarks in the discussion of my previous papers. Having my work characterized as the greatest discovery of the age by one member, my name associated with that of Jenner by another, and another give expression to his pride that a member of this Society had done what I have; would be exceedingly gratifying to me at any time, but especially just now when I am promulgating ideas which must arouse the indignation of every great medical professor in the world, because they, if true, convict him of teaching errors that have not only cost hundreds of thousands of lives, but have discouraged all investigation in this most important field, and must incur the bitter hostility of a large class of physicians who not daring to adopt my treatment, or failing to secure the results I claim, will lay all the blame to my method, rather than upon their application of it. I wish, too, to thank the editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, for so promptly defending me from the spiteful attacks of the editors of two or three medical journals.

I wish too, to say to the members of this Society that I fully appreciate their courtesy in giving up most of their last meeting to my second paper on the same subject. And when they by a unanimous vote gave me the floor again this evening, I could not help wishing that my work were enough advanced to enable me to make my third paper something more than a mere effort to inaugurate a new era in the diagnosis, prognosis and treatment of typhoid fever, the subject which for more than twenty years has lain nearest my heart, and to which all the best years of my life have been devoted. To the strictly scientific part of my work I need not even call your attention. Most of it has been better done by abler workers, and some of it is in too chaotic a state to be even alluded to amongst scientific men, since we know so little of the cause of typhoid fever that we can not say positively that any one germ invariably produces it. And so little of the real action of the remedies exhibited that we are unable to say whether eucalyptol and guaiacol, or creosote, or calomel, or any one agent is essential, or how or why a cure has invariably followed their exhibition.

The importance of the subject to you, to all American and Canadian physicians, and indeed to practitioners of medicine all over the world, wherever typhoid fever prevails, can not be overestimated, because of its terrible mortality.—(The death rate in Pittsburg in 1892 was 23 per cent.); because of the broken constitutions of the more than 100,000 who recover from the disease in the United States annu-

ally; because the king upon his throne, the statesman wielding the destinies of the greatest nation, the merchant with his princely wealth, and the most brilliant physician, with all their resources, and all their power can not escape it, and because, last but not least, aside from the method of treatment I have given you, there is no known means of aborting the disease or of saving the life of every case.

That I can do this, the charts shown you at the last meeting of this Society (a few of which have been published), and which represent only cases that I have treated since the 25th day of June, 1893, and of the cases I have treated since that time only such as presented absolutely pathognomonic symptoms of typhoid fever, in nearly every one of which the diagnosis was confirmed by from one to five of the ablest diagnosticians in the country, are unquestionably



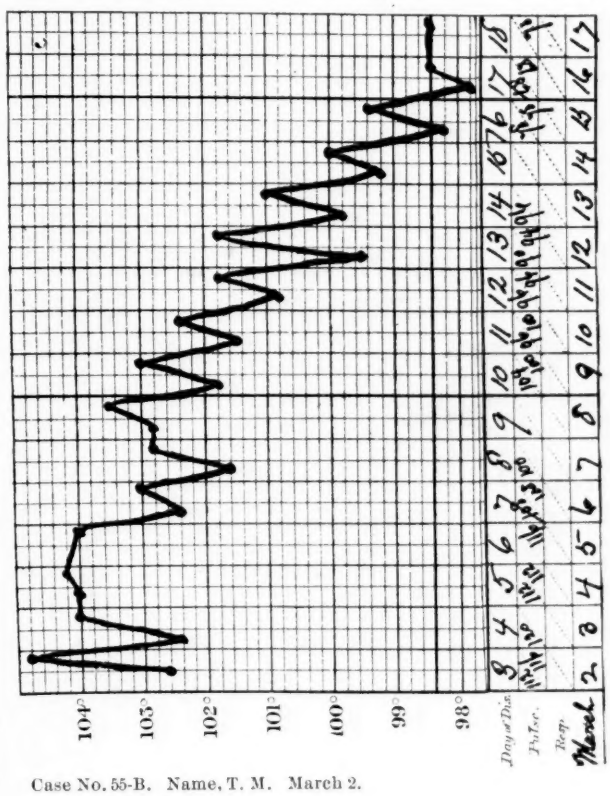
Case No. 55-A. Name, T. M. Diagnosis confirmed by Drs. McCurdy, Dickson and Robert Gibson. This patient not seen again until March 3.

conclusive evidence. At least you must accept them as such, until you can produce an instance where I have had a case which had been sick less than eight days when I was called, and lost by death, or failed to abort, or to so modify the disease as to cause it to run an exceedingly mild course (unless complicated by preëxisting or co-existing disease).

A bold assertion after reading Osler's statement, ("The Principles and Practice of Medicine," 1892, page 33): "The profession was long in learning that typhoid fever is not a disease to be treated by medicines;" also on page 531, he says: "We are still without an agent which can counteract the gradual influence of the poisons which develop in the course of acute febrile diseases, such as typhoid fever, pneumonia and diphtheria."

And yet twelve years before this book was published (in 1880) at an unusually largely attended meeting of this Society, I condemned all of the published methods of treatment of typhoid fever; gave in detail my treatment and foreshadowed in some measure the important results I expected to follow its adoption, by telling the essayist of the evening that if he would abandon his own, and all known methods of treatment, and pursue the course I had indicated he would have better results, but he, while expressing his respect for me as a careful practitioner condemned my theories and the remedies I proposed, as did every other member who joined in the discussion.

In 1882 I addressed the Society on the subject of intestinal hemorrhage in typhoid fever, saying that it would be unknown if the disease were properly treated, and that it would be a safe rule to send to State's prison any physician who ever had such a case, presupposing that he was called in due season, admitting such a law might occasionally do injustice, but claiming that its general effect would be beneficent. Some of you will remember

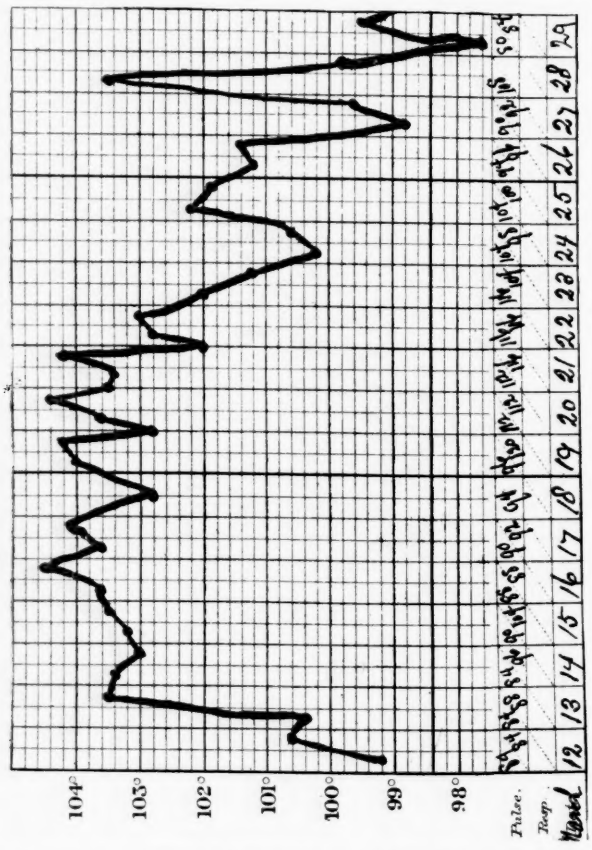


Case No. 55-B. Name, T. M. March 2.

that on Nov. 13, 1884, in the discussion of a paper by Dr. Thomas on the use of the term, "typho-malarial fever," I condemned its misapplication to cases of true typhoid fever with no malarial taint, and took occasion to say at the same time that the term, "malarial fever," was misapplied when used to designate a fever that runs three or four weeks without intermission or distinct remissions, and ends in death from intestinal hemorrhage or exhaustion. That again in 1890 I spoke in condemnation of the use of the coal tar derivatives in the treatment of the disease, saying that I believed that a very large percentage of the deaths from heart-failure were due to their exhibition, and that in 1891 I again spoke to the Society on the subject, saying that I believed typhoid fever could be aborted. Thus the fact that I have regarded typhoid fever as a curable disease has been no secret since 1880; and that when called

before the sixth or eighth day of sickness I invariably give a prognosis of ten or twelve days sickness, or if longer, so mildly sick as to cause no uneasiness—no danger—is also well known; and the medical profession abroad will understand that if I had failed in a single instance to make my prognosis good, both the people and the profession here would have held me responsible years ago.

During all these years I had made every possible effort to prove the correctness of my theories, so that when I appeared before my Society, claiming the ability to do what all of the great teachers have taught and believe is impossible, I might have the means, not alone of proving my assertions, but also of defining the principles governing the proper treatment of the disease. But my claims were too absurd for belief, even by the most credulous, and although the author-

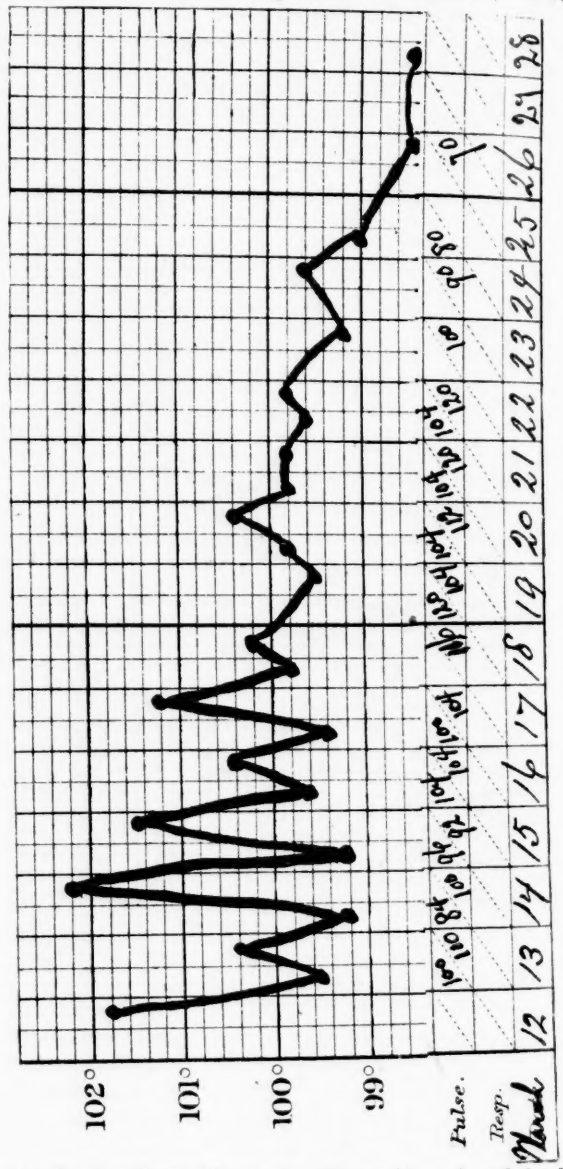


Case No. 60. Diagnosis, Typhoid fever. Name, Mrs. A. McF. Diagnosis confirmed by Drs. McCurdy and Dickson. Complicated with inflammation of both lungs and hemorrhage from the right lung.

ities in some hospitals would permit me to see their patients or make dissections, it was long an utter impossibility for me to secure an opportunity to treat even a few patients in a public way, under the observation of a skilled diagnostician, notwithstanding the fact that my applications were supported by the highest credentials.

I met with so many discouragements that lack of money alone prevented me from opening a hospital for typhoid fever in which to demonstrate to the world how to abort the disease, and a few thousand dollars placed at my disposal in 1880 would long ago have resulted in the saving of many thousands of lives annually, as well as the great amelioration of those other thousands who languish weeks in a burning fever, then suffer the horrible pangs of hunger (I have felt them), and finally as mere shadows of their former selves emerge from their sick-room and creep about more dead than alive, often for months, when they might just as well have sat up and eaten beefsteak or bread and butter after the sixth or seventh day of treatment.

A few years since when Dr. McCurdy was President of the Ohio State Medical Society, and by virtue of his office was the highest representative of the profession of the State, we had several interviews on the subject of publishing my claim that typhoid fever could be aborted, and the method of treatment that seemed best calculated to produce this result, and we



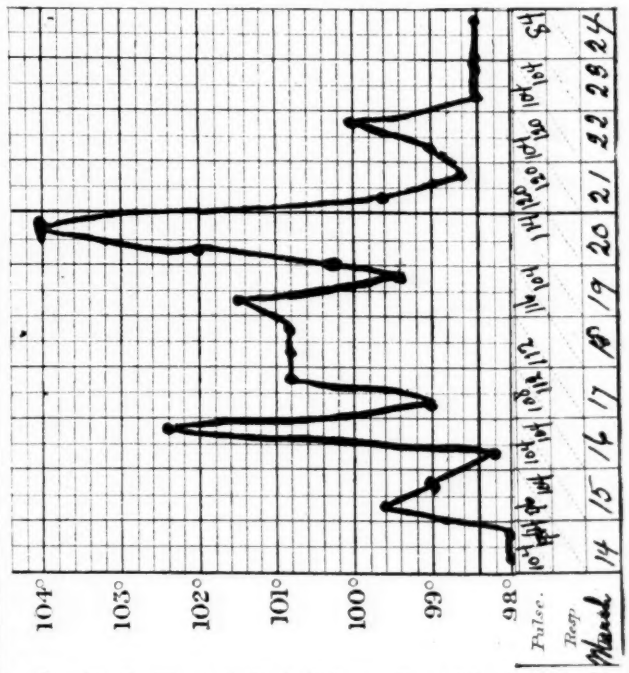
Case No. 62. Name, Miss A. M. Diagnosis confirmed by Drs. McCurdy and Dickson.

both felt that without more conclusive evidence than I could then adduce of my ability to abort the disease that no possible good would result from such publication; and although he has done me the honor to pronounce my method of treating typhoid fever a wonderful discovery, yet he expressed the belief that such premature publication would greatly imperil my professional career. I believe the Doctor still thinks, and I am sure the opinion is correct, that it would have been better to have waited a few years longer, before making any public announcement on the sub-

ject, because my cases are yet too few to carry conviction to the mind of every member of the profession that it is possible to abort typhoid fever, and twelve years of active private practice, without a death, is not long enough to convince every one that death is a wholly unnecessary consequence of the disease. Had I waited until I could have reported the cases of twenty years, without a death from typhoid fever, and a proportionately increased number of aborted cases; waited, too, until I had completed my investigations so far as to enable me to state with exactness the laws upon which the scientific treatment of typhoid fever depend, instead of detailing the treatment which I gave individual cases, and giving formulæ which, while acting admirably, may and probably do, contain ingredients which add little, if any to their efficiency, enough of thinking men in the profession would then have accepted my theories to aid me in convincing the unthinking, and the treatment of typhoid fever would have been revolutionized. Now what will the result be? We must wait and see. How long? Who can tell? The lessons of the past must be unlearned before the lessons of the future can be understood. All of the great teachers of the past and the present have so iterated and reiterated the statement that typhoid fever can not be aborted, that it will take long to unlearn that one lesson, especially while the very best and latest text-books, and all of the leading medical professors of the world are teaching the contrary; and until this lesson has been learned it is useless to expect physicians to succeed with the abortive treatment of typhoid fever, for only to the most careful watching and the most skilful use of the remedies at our disposal will this treatment yield its happiest results. How can he succeed in such a work who firmly believes in the impossibility of success, or how can he be expected to give due energy to a work in which he has no faith?

Another lesson which will be difficult to unlearn and which is taught by the great teachers with as much unanimity as the other, is, not to treat symptoms. Beginning at any given day early in the disease, one should treat a patient with a temperature of 105 or 106 degrees exactly as one would were the temperature 101 or 102 degrees. The physician who says that the important object to be attained is to bring the temperature down, is like the man who would attempt to resuscitate a drowning man without first taking him out of the water, and the end would probably be the same in either instance. It is not the symptom which kills the patient, and one patient with a temperature of 105 degrees may be on the high road to recovery, while another with a temperature of 101 degrees or even lower may be rapidly approaching the grave. Watch the temperature, the pulse and all other symptoms as matters of scientific interest, and as showing the results of treatment given hours or even days before, but not as giving any indication for treatment in the future. This rule applies only in cases which have been properly treated prior to the eighth day of sickness. Last month, I gave in detail the treatment of three typical cases of typhoid fever. Two were treated regardless of symptoms, and one which I did not see until the sixteenth day of his illness, and for that reason, was treated almost entirely by the symptoms. All recovered, but while one was not allowed any solid food for ten days after his temperature was normal, the others ate solid food all of the time. Two were never sponged at all; the other thoroughly. The one was not allowed even to rise to stool; the others sat up and walked about and one of them went out of doors during his illness. The detailed treatment of these individual cases was given because to them I gave nearly, if not quite, every remedy that I regard as essential to the abortive treatment of the disease, in all of its various stages, and because I wished to make more careful observations before attempting to publish a thesis on the treatment of typhoid fever. In future, as my investigations result in improved methods, I shall give the profession further details, and I hope to be able to go much more fully into this part of my subject in a paper which I propose to read at the San Francisco meeting.

Admitting that typhoid fever can be aborted, it becomes a matter of prime importance to decide how to abort every case and save every life. This will be impossible as long as the people buy and use patent medicines, take domestic remedies or for any reason neglect to send for a physician in season, and they will never realize the importance of sending for a

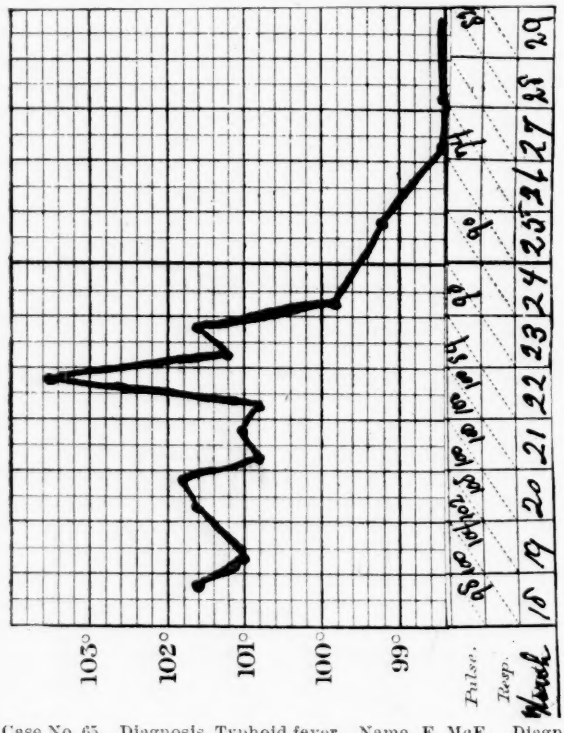


Case No. 63. Diagnosis, Typhoid fever. Name, Miss M. McF. Diagnosis confirmed by Dr. Dickson.

physician in due time so long as he fails to make a diagnosis and institute proper treatment promptly when called.

Typhoid fever is man's most insidious enemy; having a long period of incubation its early diagnosis becomes a matter of the greatest importance, and should invariably be made the first time the patient is seen, with sufficient accuracy to warrant the institution of proper treatment. I readily concede the impossibility of always making a correct or positive diagnosis at the first visit, but every case in which the temperature is ever so slightly elevated and the pulse ever so little accelerated, in which no contra-indications can be discovered should be prescribed for as a case of typhoid fever, thus giving the patient the benefit of every possible doubt, since I know of no disease or condition which under this rule would be unfavorably influenced; on the con-

trary the diseases in which this course would be ideal treatment are too many to be even mentioned in one short paper. In diphtheria, in measles, in variola, in malarial fever, in pneumonia, in influenza and all catarrhal troubles you have given your patient the best possible initial treatment. You will remember that I was assigned the duty of presenting a paper on "La Grippe" at our annual banquet, after its visitation in 1889, and that I then said that I accredited the fact that I had had no deaths from la grippe or any of its sequelæ to the treatment I had invariably pursued. I might have added that although I made no mistake in diagnosis, I regarded *for purposes of treatment*, every case of la grippe as a case of typhoid fever, except that I usually gave the remedies in larger doses. Thus, while la grippe and typhoid fever differ so widely that I do not think any careful physician would be likely to make a mistake in diagnosis, they are best treated in almost identically the same way, at least, in their

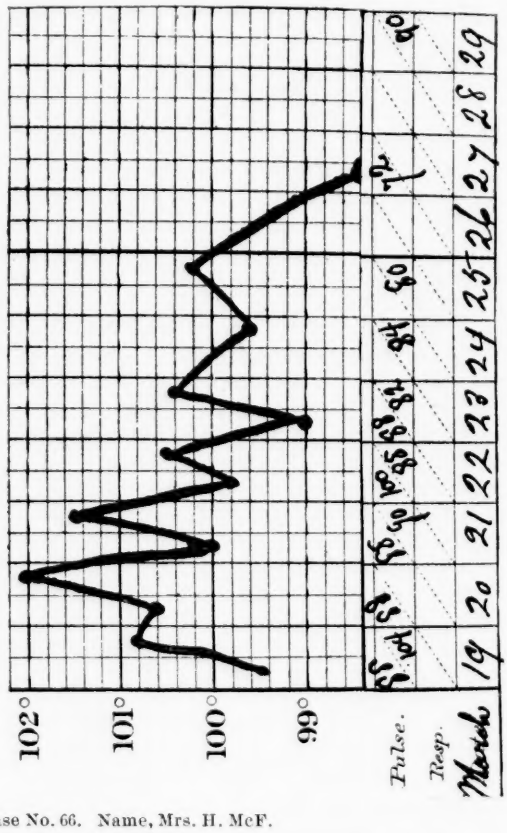


Case No. 65. Diagnosis, Typhoid fever. Name, F. McF. Diagnosis confirmed by Dr. C. C. Booth.

earlier stages, and the same is true of all of the malarial fevers and of the so-called "typho-malarial fever," if there be such a thing.

During my long and intimate association with my uncle, Dr. Timothy Dwight Woodbridge, whose well-stored mind and brilliant intellect enriched by the observations of more than fifty years of active practice, made him not only a pleasant companion but always a wise guide in all matters relating to our profession, he often said that there *was no malarial* fever in *this* locality which would ever cause death, even if left without medical treatment, and yet our Health Officer's report for last year (1893) shows twelve deaths from *malarial* fever and only nine deaths from typhoid fever. If Dr. Woodbridge, Sr., were right, and my experience certainly sustains his opinions, then there are three horns, and three only, to the dilemma of the physicians who made these reports. Every one of these cases was a mistake of diagnosis, a false report, or the medicine and not the disease killed those twelve patients. In this conclusion I am ably sustained by Dr. Eliot, of New Haven, who says:

"When typhoid fever really exists but is not correctly diagnosticated it is, in this vicinity most frequently called malarial fever, and at a later stage, typho-malarial fever. This mistake generally depends upon a mixture of ignorance and carelessness. I do not care to maintain at the present time that typho-malarial fever never occurs. I presume that every one is aware, however, that this term should be limited to cases of disease which are due to the simultaneous action of the typhoid and of the malarial poisons. I am thoroughly convinced that most cases of so-called typho-malarial fever are in reality cases of *typhoid fever*. If a malarial element is present in some of them it is possible to remove it



Case No. 66. Name, Mrs. H. McF.

promptly by appropriate treatment. With regard to cases of so-called malarial fever it should be remembered that most fevers which are caused by malarial poison are of a distinctly intermittent or remittent type. If, therefore, a case of continuous fever occurs which is uninfluenced by adequate doses of the ordinarily used anti-periodics, there is good reason for challenging the diagnostic accuracy of any one who pronounces such a case malarial fever. In most cases of this kind the disease is enteric fever. The vital statistics of our city and State show a number of deaths as due to malarial and typho-malarial fever which is almost equal to the mortality reported from typhoid fever. There is little doubt that the majority of these cases reported represent mistakes in diagnosis, where enteric fever has been overlooked and called by another name."

The above quotation is perfectly applicable to this locality, except that our statistics are worse than

those of New Haven, and would have been even worse than they are had not some diagnoses of malarial fever been corrected to typhoid fever by consulting physicians before death, sometimes even in the third or fourth week, corrections that came too late to benefit the patient. There can be no doubt if these reports could be analyzed and autopsies made, there would be found a large number of deaths due to typhoid fever which have been reported under other names. Osler, than whom there is perhaps no better authority, says, in "Principles and Practice," page 30, that "cases coming on with severe headache, photophobia, delirium, twitching of the muscles and retraction of the head are almost invariably regarded as cerebro-spinal meningitis;" that he has thrice performed autopsies on cases of this kind in which no suspicion of typhoid fever had been present, and adds: "Cerebro-spinal meningitis is, however, a rare disease, typhoid fever a very common one, and the onset with severe nervous symptoms is by no means infrequent. Fully one-half of the cases of so-called brain fever belong to this category."

Some of you may object to my method of making a diagnosis; may say that I reach conclusions from insufficient data. But you are reminded that this is a diagnosis for treatment only, and to be verified or corrected by future observations and at the earliest possible moment, and that it can be justified only on the premise that the physician's most important duty is to cure his patient rather than strive for the unattainable absolute accuracy of diagnosis. I am aware that you can approach very close to an absolutely exact diagnosis in typhoid fever if you await the development of all the characteristic symptoms of the disease, but you will purchase your *exact* diagnosis at far too high a price, and it will come too late to benefit your patient. It is strange, too, what a varied value different members of the profession place upon the symptoms ordinarily supposed to be pathognomonic of typhoid fever. One will pin his faith to rose spots, another to tenderness in the right iliac-fossæ, another attaches much importance to tympanites and dullness over the spleen; while one old physician who actually believes he is something of an authority, says he never saw a case of typhoid fever in which there was not diarrhea with little black specks through it. He is on a par with those who fail to make a correct diagnosis until their wits are awakened by the appearance of rose spots or the supervention of an intestinal hemorrhage. Their diagnoses may be exact, indeed, but so far as any benefit to be derived from treatment is concerned they might almost as well have been made in the dead house. A diagnosis of typhoid fever based on such slight evidence as two symptoms only, and those common to many other pathologic conditions might and probably would occasionally require future correction, but could never result in harm to the patient, because the remedies administered in the doses advised could do no possible harm in any condition which could be mistaken for typhoid fever; and while the best possible treatment for any stage of this disease would be almost equally beneficial in the early stages of any acute fever, and a very large majority of these, including mild cases of typhoid fever, or typhoid fever taken very early, would be cured long before a positive diagnosis would ordinarily be made in typhoid fever, or indeed before the development of pathognomonic symptoms would render such diagnosis possible. If you await the appearance of these, you will rarely succeed in aborting the fever; and unless you are an exceedingly expert diagnostician you will sacrifice a very large percentage of this class of patients.

I hand you the completed chart of Angus McFee, No. 51, which was shown up to date at our last meeting, and in whose case a fatal end was so confidently predicted by a member who had examined him in the afternoon. You will please observe the rapid fall of temperature after each application of large doses of the eucalyptol-guaiacol mixture to the abdomen. He had two or three small hemorrhages of the bowels. (Dr. McCurdy, who saw Mr. McFee with me immediately after I was first called, during the discussion of this paper said that he considered this the worst case of typhoid fever he had ever seen.)

I was called to-day to see his wife, Mrs. Angus McFee, Chart 60, who undoubtedly has typhoid fever. If so hers will be an exceedingly interesting case, since it will be complicated from the beginning, she having had extensive pelvic trouble since the birth of her child. On the night of ——— she was called up and stood on a cold oil cloth, contracting a severe cold to which she accredited her violent headache and backache, cough and the agonizing pains in the region of the right nipple, and for this reason did not send for me until to-day.

Dr. Dickson and Dr. McCurdy confirmed this diagnosis. The abdominal symptoms yielded promptly to treatment, but the trouble of the lungs grew rapidly worse and culminated in a profuse hemorrhage of the right lung. The temperature to-day, March 29, as you will see, is in the morning 97.8 degrees, and this evening 99.6 degrees; cough still troublesome, but otherwise she is quite well, has eaten a little beefsteak yesterday and to-day, and her diet is left unrestricted hereafter.

A brother, sister, and sister-in-law who aided in nursing A. McFee have each had an attack of typhoid fever since Mrs. McFee was taken sick, and all are well. See Charts No. 63, No. 65 and No. 66.

One of the charts published in my last paper as complete is reproduced.

T. Murdock (Chart No. 55), whose temperature and pulse were normal, who sat up and ate beefsteak on the tenth day, who took no medicine after the thirteenth day of treatment, and whose temperature and pulse were still normal to the eighteenth day, after which he was not seen until March 3, which was the twenty-seventh day. He was therefore, with the exception that he did not regain his strength, apparently entirely well for fifteen days; ate such food as he wished, walked out of doors and up stairs every night to bed until March 3, when I was recalled and found morning temperature 102.6 degrees; afternoon temperature 104.8 degrees, with pulse 112 to 116; although there were no rose spots, much abdominal tenderness, nor tympanites, it was unquestionably a relapse of true typhoid fever, from which he recovered more slowly than from the first attack; his temperature first touching normal on the fourteenth day of treatment. Of cases that I have seen early in the disease this is the first relapse I have ever had.

His sister, Miss A. M., No. 62, residing in the same house, consulted me March 12, 1894. She presented fairly well-marked symptoms of typhoid fever, except that the tenderness and pain in the right iliac fossæ seemed to justify a graver disease. She had been

attended during last summer for what her physician diagnosed as inflammation of the bowels. The development of well-marked swelling in the painful and tender right iliac fossæ prompted me to call in consultation two eminent abdominal surgeons, Dr. McCurdy and Dr. Dickson, who both expressed the opinion that she had typhoid fever complicated with grave pelvic trouble. She recovered in fourteen days. (See clinical chart.)

If in these preliminary papers I have convinced you that it is possible to cure typhoid fever; that in the future a death from the disease will be *prima facie* evidence of culpable ignorance or criminal carelessness, either on the part of the patient, his friends or his medical attendant; that the long weeks of burning fever followed by a shattered constitution and sometimes clouded intellect, need no longer be feared; if I have impressed upon your minds the importance of making an early diagnosis and promptly acting upon it; have shown you the danger of mistaking typhoid for malarial fever or any of the milder diseases, and have clearly indicated that the scientific treatment of typhoid fever in its earliest stages is also the best possible initial treatment for any disease for which it is likely to be mistaken, then your time and mine, and the space these pages will occupy in the JOURNAL, could hardly have been put to better use.

AN INTERESTING CASE [MORPHIA HABIT].

Read before the Shelby County Medical Society at Shelbyville, Ind., March 12, 1894.

BY H. O. PANTZER, M.D.

INDIANAPOLIS, IND.

PROFESSOR OF CLINICAL GYNECOLOGY AND SURGICAL PATHOLOGY, CENTRAL COLLEGE OF PHYSICIANS AND SURGEONS; GYNECOLOGIST TO CITY HOSPITAL AND CITY DISPENSARY, ETC.

An irritable stomach from stenosis of the esophagus is treated long time for cancer of the stomach, when the morphia habit is formed. Exploratory laparotomy leads to a correct diagnosis. Cure by bougies and irrigation of the stomach. The morphia habit is cured by the resuscitation of the moral powers. Discussion of the essentials underlying the cure from vice of habit of any kind. Subsequent development of cancer in the right ovary. Cure by celio-salpingo-oöphorectomia duplex.

Mrs. M. L., American, aged 42 years, is married and the mother of four children. I was called to see her in consultation with her family physician, Dr. R. F. Bigger, in April of 1892. Then she had been an invalid of four years, being confined to bed continuously of late. The disease began with an irritable stomach and indigestion. She frequently vomited after eating, and retching at times was quite persistent. At times, food after swallowing seemed not to go down well. She suffered sharp deep-seated pains in the epigastric region, seemingly irrespective of meals taken. She soon lost appetite, and became emaciated. She was much troubled with sour eructations, and felt sore in her stomach at all times. Different medicines given for these conditions, and careful dieting were of no avail. In the start the diagnosis of indigestion was made; later on the persistence of the trouble and its increasing severity, together with the emaciation and a discolored skin, led to the diagnosis of cancer of the stomach situated near the cardiac orifice.

Three eminent physicians, singly, in turn, had seen the case in consultation with Dr. Bigger, and all concurred in his diagnosis. One of these, a famous abdominal surgeon, gave it as his opinion that the walls of the stomach were infiltrated to an extent making any operative venture without prospective good, though he offered to make an exploratory incision in consideration of a doubt that always pertains to intra-abdominal diagnosis. The ordinary remedies for cancer and indigestion were given; and for the relief of pain various drugs were tried in turn until morphia was settled upon. This drug, at the time I saw her, was being given in 5 grain doses hypodermically every morning and evening.

I found the patient feeble and emaciated, having a dry and shriveled skin of a pale, somewhat sallow color. The color of the skin, to me, rather than cancer, suggested tuberculosis. The tongue was swelled and flabby, coated and foul; it was distinctly malarial in character, though seemingly showing more, besides. The temperature ranged between 98 and 100 degrees F., without any regularity in its rise and fall. The pulse was weak, 80 to 100 beats per minute. Latterly, she had at times showed symptoms of hydremia, expressed in edema of the extremities and face. The heart and lungs showed nothing abnormal. The abdomen was considerably distended, tympanitic, tender to light touch, sore and even painful to pressure in the epigastric region. There was increased hepatic and splenic dullness and tenderness. The subcutaneous glands nowhere were found enlarged. With the patient on her back, there seemed to exist a low area of dullness, like that from ascites, but this could not be verified in any other position of the body. The menstrual function was reported to have been normal until the present trouble had existed one year; then the flow became sparse and painful. The examination of the pelvic organs revealed nothing abnormal, excepting local tenderness. This and the dysmenorrhea and sparse flow were ascribed to the frequent vomiting and retching, and to the great general debility. The patient complained of great pain in her stomach and, though less in degree, throughout her abdomen. I was informed that her bowels were constipated and sluggish to act; that she could eat little and retain hardly anything; and, whereas her normal weight was from 140 to 150 pounds, that now she weighed about 90 pounds.

I inflated the stomach with carbonic acid gas water for purpose of diagnosis, but failed to distend this organ very much. I attributed, at the time, this failure to her slow drinking of the aerated water, and the immediate eructations following its ingestion. I found no evidence of tumor, nor of thickening of the wall of the stomach anywhere. An examination of the dorsal region showed nothing unusual; no area of dullness which might exist were cancerous tumefaction present about the esophagus.

I made no definite diagnosis. I felt I should have to accept the opinion that there was no cancer; at most this could only be of very recent development, and then it was not yet clinically manifest. I suggested the possibility of a peritoneal tuberculosis developing in the region of the cardiac end of the stomach; say from post-mediastinal glands or diaphragm. This seemed the most tenable supposition by the clinical history. The personal history of the patient contained nothing suggestive of the pathology further than her dark skin and that tuberculosis had occurred in the family. Undoubtedly the morphia habit was much to blame for her present trouble. I reasoned that possibly the disease for which the morphia was originally given, might have been long passed, and that the drug habit, contracted meanwhile, perpetuated the suffering. Stricture of the esophagus was thought of, but easily dismissed from mind. There was nothing given in the history of the life of the patient to inculpate this organ and besides, the trouble seemed beyond the esophagus, inasmuch as she could swallow food well enough, only that she had trouble in keeping it down. I advised to fathom the theory of cancer by an exploratory incision, and if no cancer were found, nor anything else that afforded therapeutic indications, to first withdraw the morphia, and subsequently to act on the clinical indications present. Even by this procedure there was little hope held out to either the patient or doctor, owing to the great decrepitude of the patient. Yet, seemingly, this plan included all hope left after four years of invalidism, confirmed by the vice of a most indomitable habit. The patient, however, was willing to submit to any procedure promising a change for better or worse. She was brought to my sanitarium on May 24, 1892. Previously, for a period of about six weeks, at my direction she was put on a liquid and semi-solid diet of the most digestible nature. This was given in small quantities at a time. During periods of great irritability of the stomach, food was withheld, often for half a day and longer. Copious injections of hot salt water (6 per cent.) into the rectum, and peptonized milk, and milk-and-whisky enemata were regularly given every four to six hours. This plan of feeding was adhered to throughout her stay at my house. Quinin was given for the cure of malaria and in small doses together with strychnia as a tonic.

The patient was operated on May 26, two days after her arrival, in the presence of Drs. R. F. and R. G. Bigger, Wm. Karstetter and E. C. Reyer, the latter giving the anesthetic, chloroform. Incision in the median line above the umbilicus. A careful search of the entire abdominal cavity was made, organ after organ being sought out and examined systematically, without detecting anything particularly

amiss. The liver was somewhat enlarged; the gall bladder was free of stones or enlargement; the spleen was moderately enlarged; nothing abnormal about the stomach *except its small size*, like the stomach of a child of 6 or 8 years, however, without any more than a slight thickening of its walls; no tumefaction, nor evidence of inflammatory disease or adhesions anywhere; nothing abnormal about the kidneys, intestines, appendix, omentum, peritoneum; no enlarged mesenteric glands. The incision was enlarged downward slightly at this juncture to examine the pelvis, and this exploration too was of negative result.

The size of the stomach, however, proved sufficiently suggestive. In considering what conditions might have given rise to this state the question of esophageal stenosis again came up, and the introduction of bougies into the esophagus a few days afterward, revealed a stricture of wide caliber near its cardiac end. The bougie at the stricture imparted the sense of being held by a pouch, and this obstacle, a few days later, when the bougie had caught in it, was forced to yield. Very likely a small cicatricial band across the lumen of the esophagus had existed and now was broken through. The recovery from the laparotomy was uneventful. The stomach was daily irrigated with a mild solution of hot soda water, which for a long time in the return flow yielded great quantities of mucus and a tenacious and shreddy matter, indicative of a chronic, deep-seated catarrhal inflammation of the stomach. Gradually, though not evenly, the stomach function and the appetite improved.

When the patient was domiciled with me, I desired to begin at once limiting the quantity of morphia taken. Heretofore it was given by injection every morning and evening, 5 to 6 grains at a dose. I proposed to divide this dose, giving it only as needed and in the smallest quantity effective. I am convinced that all cures of the morphia habit are temporary, deceptive or farcical, except where they are based on the regeneration and development of the moral force in man; this, quite irrespective of drugs or all other adjuvants employed. The moral feature is the essential etiologic condition in producing a vice of habit of any sort, be it addiction to morphia, alcohol, cocain, tobacco or what not; and the therapy must be selected and employed with regard to this. It is true this is in absolute contradiction and condemnation of the gold cure, and kindred procedures. Unfortunately, we can not satisfactorily investigate, for the purpose of negation, the real virtue of these methods. Thus we can not compute with sufficient accuracy their percentage of relapses in advertised cures, and we know nothing of the number of their absolute failures. The men interested in these methods stand, necessarily, in a position hostile to the exposure of their failures. Certain is it, that some cures are deceptions from the start; that many of the others are of short duration; and that the number cured permanently is small. The permanent cures, it may be argued, may fitly be ascribed to the revival of the moral powers residual in the respective individuals, almost regardless of other therapeutic means and measures employed.

We must accept the Biblical doctrine that man is built in the image of God; and hence, that his capability of development is infinite. The meaning of the passage in the Lord's prayer, pertaining to the evil of temptation, certainly is ofttimes too narrowly construed, when it is made to read that man is absolutely unable to meet temptation, and to withstand it. This construction is in antagonism to the doctrine that man is built in the image of God, and in its pedagogic application it is of disastrous effect on the moral development of man. Man shall not seek out temptation anywhere. But equally shall he not evade it when it meets him in the regular path of his daily presence and mission among men. Of the two extremes, it is much better that we purposely seek temptation, to merit by qualification the divine heritage, than that we hide away in abject fear, and suffer degradation, degeneration and demerit.

For the purpose of illustration imagine the individual from infancy reared in the ever-present consciousness of this godly attribute by which he may meet temptation and withstand it! Add to this the legacy by hereditary transmission of the moral wealth accumulated through hundreds of generations reared and strengthened by such doctrine and its strife! Or, on the other side, by the same activity and duration of forces, compute the moral loss to mankind in consequence of the pedagogical mistake mentioned!

Prohibition and refuge from temptation beside their direct degenerating effect, ultimately develop deception and hypocrisy. We must admit, as being logical, that we can not trust to extrinsic conditions for the support of a moral failing in man. The ordinary environment of man is ever changing, inconstant and, hence, fickle and unreliable.

Prohibition and refuge from temptation do service, but only while they are present; they impart no lasting property, no power. Thus the ordinary asylum for the morphia habitué is inseparably connected for the inmate with conditions which withhold from him his coveted drug; here are no ways, nor friends by which morphia can be procured; and everything is arranged to abolish temptation. Exchange this environment for the ordinary conveniences and attractions offered as soon as the patient is returned to society and freedom, and, because the provisions and restrictions of the institute are wanting, early the consciousness of this want is felt. It soon befalls the victim of habit like a frightful darkness, from which rescue seems possible only over paths heretofore wandered and recognized even by the blinded senses. An improvement, a cure is possible only by the constancy of an adequate support. This support is constantly present only where it rests within the individual. Where, however, the degeneration of moral power and where the neglect of its function has not annihilated this faculty, we have truthful cause to hope for its redemption and resuscitation. This moral basis of a cure is true, and it gives the best possible and only assurance of its duration. I am led to this discourse by reason of the credence commonly given to the virtue of drugs; to the retirement of the patient for the purpose of effectually withdrawing the coveted drug; to the seductive effect of large numbers seeking the same end; to the swaying properties of public mentioning for like purpose, and to other measures. This credence is bestowed, owing to an erroneous conception of the relation of things. Never, nowhere, does a drug replace a moral want or deficiency in man. Such methods are subterfuges, deceptions and snares. They lack truth and they lack the desired effect. They must be relegated to the division of mere auxiliaries, if they be not entirely banished from therapeutic consideration.

My patient was informed of the negative result of the exploratory incision. She was told that her case included nothing requiring the continued use of the morphia; that the morphia was a positive harm without any redeeming feature in it for her; that all her varied interests as an individual, as a mother, as a a wife, and as a member of society demanded the disuse of the drug. That she must quit it for her salva-

tion; that she could do this; that she must and could do so alone by her own effort, and that her effort alone would suffice; that she had best begin at once. She was to be her own judge of what she needed; she was to have what quantity and whenever she asked for it. My nurses were instructed accordingly; they were bid to give the patient morphia whenever this was called for by her, as freely as when she called for food or drink, aye, even more, without any restriction, The patient was impressed with the sincerity of my conviction that her habit was an unfortunate fault acquired; that during the time of her cure from this habit she could not do entirely without morphia; that as her condition would vary, so would she require more and less; and that I relied entirely on her to guide me in giving the drug. Obviously this step was preceded by her fullest conviction of the disastrous consequences of her habit: That the morphia to her was really a curse and a detriment.

I here append an extract from the clinical record giving the daily dosage of the morphia taken during all the time to its complete abandonment on the twenty-ninth day.

First day, 24 hours	3	grains.
Second day, till time of operation	1¼	"
Third day	6½	"
Fourth day	3	"
Fifth day	3½	"
Sixth day	1½	"
Seventh day	1¼	"
Eighth day	¾	"
Ninth day	½	"
Tenth day	⅜	"
Eleventh day	⅜	"
Twelfth day	⅛	"
Thirteenth day	¼	"
Fourteenth day	½	"
Fifteenth day	¼	"
Sixteenth, seventeenth and eighteenth days, each	½	"
Nineteenth day	¼	"
Twentieth and twenty-first days, each	½	"
Twenty-second day	7-12	"
Twenty-third day	0	
Twenty-fourth day	¼	"
Twenty-fifth day	½	"
Twenty-sixth day	¼	"
Twenty-seventh and twenty-eighth days	0	
Twenty-ninth day, last dose	¼	"

The single doses varied between one-eighth grain and one grain; the former dose being given once only; one-quarter grain was the ordinary quantity asked for, excepting during the first five days, when one grain doses were administered quite often. The morphia was given all by hypodermic injection. The entire quantity given during the twenty-nine days was twenty-eight and one-half grains. No attempt to deceive the patient as to the quantity given was ever made. The last one-quarter grain dose was given toward morning, after almost three days' abstinence. The patient was restless and sleepless, and tired out, when she rang the bell for the nurse and asked for one-quarter grain of morphia. It was given without a plea or remonstrance on the part of the nurse. But it had hardly been injected, before the patient grew angry with the nurse, rebuking her for giving it, and saying she had no need of it. She made a wild effort to withdraw it from her arm with the clutched hand of the other arm. This was the last time she took morphia by her own wishes. Very nearly two years have passed since then, and to her they were years of much suffering and distress from various causes. During this time she underwent another laparotomy, eight months after the former, to which I shall refer again in the regular narration of this case. During the first twenty-four hours following this operation, I ordered the injection of two one-quarter grain injections of morphia, and another on the second day. These were taken by the patient with a sense of revulsion. I distinctly recall her pleading look when first the drug was proposed. It was as though asking anxiously and imploringly: "Can't I do without it? Don't you fear to give it to me again?" My decision was firm and well founded; it did no harm, as the consequence proved. I have this patient where I can observe her, and I am convinced that she is cured permanently. After three months the patient could not be recognized as the same woman. She had become rejuvenated, and gained in flesh, vying with her grown daughter in plumpness and vivacity. Subsequently the patient recalled once having eaten, two years before the beginning of her stomach trouble, a hot morsel of meat, which became lodged in the lower end of the esophagus, and which for the want of any fluid at hand she could displace neither upward nor downward for some minutes. She suffered pain in this region for a week or so afterward. She had never thought of connecting this event with her ailment, nor even thought of it at all again until now. Undoubtedly this was the cause of her esophageal stricture. Since her cure the patient has had repeated attacks of neuralgia, and of articular rheumatism, which each time revived the irritability of her stomach. At such times she resumed the daily irrigation of her stomach, which she had learned to do herself, and at no time again did these symptoms give rise to much trouble.

About this time her menstrual periods grew successively more painful, and they were accompanied and followed by great tenderness throughout the lower abdomen. The flow returned every three weeks, continued longer than normal and was clotted and dark. She had whites between the periods. She suffered at all times from sharp pains radiating from the right inguinal region and great weakness in the loins and limbs. Hor bowels again were costive and required urging by medicine or rectal injection. Her stomach, too, became irritable, and her appetite failed her. An examination on Dec. 14, 1892, revealed the womb normal in size, congested, twisted on itself from a point in front to the right; its fundus was drawn to the right and descended and somewhat fixed there. The right ovary was found prolapsed, adherent, enlarged and painful. The left ovary was slightly enlarged and tender, and its tube thickened and pulsating. A small nodule was left on the posterior surface of the womb, near the left horn. Hot douches, ichthyol tampons, bromids, rest in bed and other remedies were tried in vain. The pains steadily grew worse, and their darting character became more pronounced; the swelling of the right ovary reduced none under treatment, if anything seemed larger, while the clinical symptoms seemed to indicate the existence of cancer. Naturally I felt chary of pronouncing it such, owing to the precedent in this case. However, I concluded to operate.

Operation at my sanitarium Jan. 20, 1893. Present Drs. R. F. Bigger, F. Harrison and R. Hessler, the latter giving chloroform. The operation consisted of a double salpingo-oöphorectomy and a myomectomy by laparotomy. I found a non-adherent left ovary, showing small cystic degeneration, its tube tortuous, thickened and highly vascular, and studded with white, glossy tumors like little pearls. The right ovary was enlarged by small cystic developments; on its free surface was a tumor the size of a large hazelnut, and of gelatinous contents; its walls were highly vascular, with a yellowish tint in some parts. The ovary and tube were studded with little excrescences as on the left side. The nodule on the posterior surface of the uterus was excised by an incision right through to its base and

each half turned out separately; the opening was sutured with a catgut suture. The microscopic examination by Dr. R. Hessler, professor of microscopical pathology in the Indiana Medical College, verified the diagnosis of cancer of the right ovary, and of fibroma of the uterus. The recovery was uneventful but for the formation of a hematocle in the left lateral ligament, probably produced by the retraction within the broad ligament of a cut vessel within the stump. This gave rise to a painful swelling in the right side, from which she fully and speedily recovered.

Since that time the patient has had no special trouble, further than occasional attacks of malaria. The examination of the pelvis within a week of this writing discovered a painlessly movable uterus and no thickening or tenderness in either broad ligament.

This case is interesting primarily because of the difficulties attending diagnosis. When once, the first time, the fatal diagnosis of cancer was made it naturally entailed the free administration of morphia. The history of this case warns us to be more careful in obscure cases to eliminate all sources of error. The case demonstrates the value and judiciousness of an exploratory incision in every case of doubtful grave abdominal disease. The comparative innocuousness of the measure, where it is carried out by skilled hands, in a properly appointed surrounding, marks the point of its legitimacy. The method of overcoming the morphia habit as pursued here commends itself by the result obtained. The principle of this method has a wide application in human effort, and should have more attention than heretofore given to it. The subsequent development of cancer in this case is an interesting clinical casualty.

The impression from the foregoing might be that the writer has not duly emphasized the importance of a sanitarium provision for the cure from such vice; or even that he stands in an attitude hostile to an institution purposely and solely conducted for the cure of this affection. Obviously, the sanitarium can readily be appointed to include all the requisites that are necessary and to banish all untoward influences that are objectionable in attempting this cure. Such appointments can hardly be attained with the patient in his or her own home. During the recovery from such vice, the patient is beset with tribulations and suffering which need and should be met effectively at once, and this can only be given by competent and authoritative presence, i. e., the doctor or nurse. It hardly needs repetition that this domicile in a sanitarium must exclude the elements or appearances of refuge and prohibition. The patient of this disease should enter upon such a course in exactly the same spirit as when undertaking the cure of a purely medical disease.

NEURASTHENIA.

Read before the St. Louis Medical Society, Jan. 20, 1894.

BY I. N. LOVE, M.D.

PROFESSOR CLINICAL MEDICINE AND DISEASES OF CHILDREN, MARION-SIMS COLLEGE OF MEDICINE, ST. LOUIS; VICE-PRESIDENT AMERICAN MEDICAL ASSOCIATION.

Since Beard's time, the well-posted physician, whether in the general field or a special line, has recognized neurasthenia "as a legitimate and well circumscribed morbid entity." Our own Dr. C. H. Hughes, of St. Louis, recognized the world over as a high authority upon neurological subjects, in a paper read before the Missouri State Medical Association fully twelve years ago, suggested as a name for the disease, general functional neurotrophia as preferable to neurasthenia. He expressed the thought at the time that the disease was a more or less general failure of the normal nutrition appropriating power in the higher nerve centers, especially the psychical, leading to consequences short of appreciable structural change—a pure neurotrophia—which is only functional in its effects and confined, in expression, to an altered and lowered functionation in the nervous system itself.

A synonym for the disease is nervous prostration, and the name which Beard himself gave to it was nervous exhaustion, but all the names are objectionable, for they suggest symptoms rather than a definite pathological condition.

The cause of this disease, like all others, may be hereditary or acquired. The medical man who is brought in close relations to the family as family physician should be fully impressed with the thought that his advice will be of value in the securing of nerve capital and a good general equipment for at least the rising generation of the family. Truly many individuals are put into the world and have crowded upon them the battles of life when they are so poorly equipped with nerve force as to be almost considered nervous bankrupts.

The child which has a tubercular inheritance can be built up and away from it; so, too, if heredity is against it from the standpoint of the nervous system, the child may be fed up and out of it.

In these modern days of specialism, while admitting that the expansion of knowledge in every department of life has largely put an end to that ideal of "knowing something about everything, and everything about something," yet the members of the medical profession should guard themselves strenuously against the danger of automatic specialism. As was recently remarked by the *Medical Record:* "The glory of modern specialism is that it has unravelled difficult questions in the etiology of disease, and its crowning work must lie in its ability to meet the demands which this new pathological inquiry makes with adequate therapeutic measures. To do this requires mental expansion in every direction, and not alone in any one."

As was well said by Dr. Hughes in his recent essay before this Society upon this subject: "Physicians may become specialists in practice, but they should never cease to be generalists as students."

The family physician, other things being equal, is well equipped for coping with the disease under consideration within certain limits, on account of his personal knowledge into the habits, manner of life and general physical make-up of the patient as well as his temperament. Hutchinson defines temperament as the sum of physical peculiarities of the man exclusive of his tendency to disease, and it has tersely been expressed as being the "peculiar way in which the individual reacts to the stimuli of his environment." Temperament has been too much neglected in these latter days. There was a time in professional and institutional circles when much more stress was laid upon this subject and an ability to recognize and know temperament used to be considered part of a sound medical training. There are many things in man which the test tube and the microscope can not discover, and in our work as bacteriologic delvers and in our desire to be

superlatively scientific, we should not lose sight of this fact.

While by no means maintaining that leisure and wealth are the only conditions favorable to neurasthenia, so-called, I still urge with Beard that it is seldom found among those who live below the upper crust of the social world; that its habitat is rather in Fifth Avenue than the Five Points. The manual laborers of the world, however little they may know, generally know enough to rest when they are tired, and they have the advantage of fewer superheated and poorly ventilated homes, besides their muscular development holds down their emotional centers to a safe level. Neither are they as a rule disturbed by the trinity of A's which confront a large proportion of those in the higher walks of life, viz: Ambition, Avarice and Anxiety, and the trio of L's which environ the rest, viz: Laziness, Luxury and Lust.

The writer desires to be placed upon record in favor of the position that in spite of the fact that cases of neurasthenia are overlooked by the family physician, yet the number that are labelled nervous exhaustion, by neurologists, which do not properly come under that head, is very greatly in excess; in other words, to a certain degree it has become the fad on the part of the American public to elect to be placed under the head of neurasthenics, and neurasthenia is the chief hobby ridden by the nerve specialist of to-day. I take the position that 90 per cent. of the so-called cases of nervous exhaustion are spurious. That they are the victims of nervous weariness may be admitted, but weariness and exhaustion are two different things. Physical weariness may occur in three ways: The muscles may be affected, the nerves may become fatigued, the brain may become weary; all or any of the three may become tired out, and this tiring out may occur time and again without exhaustion resulting; and the classical symptoms as given by Beard and corroborated by so many other observers the world over which apply to nerve exhaustion, may appear in a modified form in the victim of nerve weariness, and suggest to the alarmist or he who is given to forming extreme conclusions that the case before him is one of exhaustion.

Michael Foster, the great physiologist, in a recent address delivered before the members of the University of Cambridge, apropos to this subject of weariness, says:

"Observations and reasonings, into the details of which I can not enter now, have led physiologists to the conclusion that a muscle not only in the body but also for a measurable time out of the body, is continually undergoing change of substance; that the complex groupings of atoms, molecules and particles by virtue of which it is alive are continually being made and as continually being unmade; the living complex muscle is always being built up out of, and always breaking down again into simpler substances. Did we possess some optic aid which should overcome the grossness of our vision, so that we might watch the dance of atoms in this double process of making and unmaking in the living body, we should see the commonplace lifeless things which are brought by the blood, and which we call food, caught up into and made part of the molecular whorls of the living muscle, linked together for a while in the intricate figures of the dance of life, giving and taking energy as they dance, and then we should see how, loosing hands, they slip back into the blood as dead, inert, used-up matter. In every tiny block of muscle there is a part which is really alive, there are parts which are becoming alive, there are parts which have been alive, but are now dying or dead; there is an upward rush from the lifeless to the living, a downward rush from the living to the dead. This is always going on, whether the muscle be quiet and at rest or be moving; some of the capital of living material is always being spent, changed into dead waste, some of the new food is always being raised into living capital. But when the muscle is called upon to do work, when it is put into movement, the expenditure is quickened, there is a run upon the living capital, the greater, the more urgent the call for action. Moreover, under ordinary circumstances, the capital is during the action spent so quickly that it can not be renewed at the same rate; the movement leaves the muscle with an impoverished capital of potential stuff, and a period of rest is indeed in order so that the dance of atoms of which I just now spoke may make good the loss of capital and restore the muscle to its former power.

"In considering muscular weariness, we at the same time must keep in mind weariness of the nerve centers, for after all the weariness of the whole body from muscular work is to a very great degree in fact chiefly a weariness, speaking broadly, of the brain.

"When we have excessive muscular exertion, the weariness may take a form of distress and if the effort be continued the distress may become so great as to occasion such complete exhaustion that even death may result. In excessive work of whatever kind it may be, in order for the work to be accomplished, there is made a greater demand upon the blood for oxygen. Difficult breathing or panting results from the changing quality of the blood. There are many things besides carbonic acid which are swept into the blood as the result of the activities of the body; in other words, the product of work in the human body is a poison which must needs be eliminated through the medium of the lungs and the other excretory organs."

Foster again well expresses it, "as the breath of man is poison to his fellow-man, so the outcome of the life of each part of the body, each tissue, be it muscle, brain or what not, is a poison to that part and its fellows, and may be a poison to yet other parts. Of each member, while it may be said that the blood is the life thereof, it may with equal truth be said that the blood is the death thereof; the blood is the channel for food but it is also a pathway for poison."

It would seem superfluous to draw attention to these well-known physiologic facts, but I do so only to emphasize the point which I make, and that is that by neglect upon the part of the individual of certain necessary laws involving rest, opportunities for oxygenation, proper attention to elimination through the various draining channels of the body, excessive work whether bodily or mental in repeated cases produces such a degree of weariness and poisoning of the nerve centers as to mislead us in the direction of interpreting the symptoms present as those of neurasthenia.

The same author in his admirable paper referred to says: "The loss of living capital, or the presence of the products of work which would have no ap-

preciable effect on a muscle, may wholly annul the work of a piece of nervous machinery. If an adequate stream of pure blood, of blood made pure by the efficient coöperation of organs of low degree, be necessary for the life of the muscle, in order that the working capital may be rapidly renewed and the harmful products rapidly washed away, equally true, perhaps even more true, is that of the brain. As physical and mental efforts are continued, the eliminating capacity unless carefully guarded is marred, the resulting poisons are more and more heaped up in the system, poison the muscles, poison the brain, poison the heart, poison at last the blood itself, starting in the intricate machinery of the body, new poisons in addition to themselves. The hunted hare run to death dies not because he is choked for want of breath, not because his heart stands still, its store of energy having given out, but because the poisoned blood poisons his brain, poisons his whole body. So also the schoolboy urged by pride to go on running beyond the earliest symptoms of distress, the mere loss of wind, struggles on until the heaped up poison deadens the brain and he falls dazed and giddy as in a fit, rising again it may be, and stumbling unconscious, or half conscious only, by mere mechanical inertia of his nervous system, only to fall once more, poisoned by poisons of his own making."

I quote liberally from the thoughts of the physiologist, Foster, for the purpose of making more clear the position taken. If continued effort without rest will poison to the extent of producing death, surely many repeated efforts which are not so much in excess with conditions favorable to accumulation of leucomaines, namely, only a tied up state of the secretions, inattention to the proper diet, accumulations of undigested and unassimilated food which undergoes fermentation and decomposition, developing ptomaines, thus adding to the reserve of poison in the system; keeping in mind the fact that the neglect of hygienic laws, failure to secure proper ventilation of rooms and the proper clearing out of the alimentary canal at proper times; surely we may have weariness and poisoning to the point of distress and even to that point which would suggest nervous exhaustion. Men who are greatly absorbed in their work have no time to think about the laws of health, but the family physician and the neurologist, as well, should realize in these cases the importance of "clearing the decks for action." They should promptly turn on the batteries which will scatter the accumulated poisons, open the windows, put the patient outdoors, anywhere so that the purest air may be breathed and elimination of the accumulated poisons hastened. In his essay read before this Society a few weeks ago, Dr. Bremer said:

"There is no class of sufferers more persistently and vigorously maltreated than the neurasthenic. The cause of this lies in the fact that there is no organ, member or tissue in the body, which has not been held up as the chief offender in neurasthenia by some or another specialist. The worst of it is that since specialism is still on the increase, the number of offending parts of the body is steadily multiplying, and however much legitimate specialism may have done for the advancement of the medical sciences, it must be admitted that the abuse of specialism has assumed the proportions and significance of a nuisance. There is to-day no specialist but does not consider neurasthenia a legitimate and fruitful field for its work, in a few instances to the advantage, but much more frequently to the detriment of the patient. Broadly stated the medical profession of to-day may be divided into two classes; the peripherists, comprising almost all specialists, and the centralists, found principally among the general practitioners and the neurologists. It has been said of the latter that whenever they do make a right diagnosis, as a rule nothing can be done for the patient. This is unfortunately true in a measure, but in this sense, that the patient has already gone the round of the peripherists, the specialists of the various organs, who mistook the case for a local trouble causing general symptoms, and tinkered at irrevelant symptoms, until the precious time for rational general therapeutics was gone. Had they looked upon the disorder of the various organs with a "central" light, interpreting the local trouble as being due to a general central disturbance, the result of their therapeutic efforts would probably have been entirely different.

"As a matter of fact it must be stated, that social strata do not make any difference in the frequency of Beard's disease. Rich and poor are indiscriminately affected by it. The only difference is in name, not in fact. For while the well-to-do neurasthenic, especially he that has an inkling of the ailment from his reading on the subject, is apt to apply to a neurologist for relief and get from him the true name of the disease, the poor man has to be satisfied with the diagnosis of biliousness, dyspepsia, catarrh and similar diagnostic incongruities, and is allowed to worry through his collapses as best he can, with the aid of quinin, calomel and tonics."

It is fortunate for humanity that the general pathologists and other specialists of the world have had this note of warning given them by a neurologist. Possibly they will in future leave the domain referred to entirely to those who look upon all the disorders of the various organs with a "central" light and interpret all local troubles as being due to a general central disturbance. However positive this dictum may seem, practitioners and specialists will more than likely still go on recognizing the fact that over-eating with too little defecation and accumulated leucomaines and ptomaines, and peripheral irritation, a figurative thorn in the flesh, all may if left unrelieved, create all of the symptoms of so-called neurasthenia, and that the cause being removed, the symptoms will disappear as if by magic.

Commencing with the teething child which is thrown into reflex convulsions as the result of an erupting tooth, all along the line to the second childhood when an unrelieved pruritis or eczema drives its victim mad with discomfort, we have evidences in favor of the thought that peripheral irritations are the prime cause in many cases of so-called neurasthenia.

Every general worker and specialist in diseases of the rectum has found patients on the border line of nervous exhaustion and almost madness, all produced by a fissure of the anus. There are probably those within the sound of my voice who have seen numerous cases presenting many of the symptoms of neurasthenia, caused by an obstructing spur upon one side or the other of the nasal septum, occasioning accumulations above up to the frontal sinuses, and at times the sufferings approaching the agonies of the damned. These cases, together with others which might be mentioned, the offending organs never having been interrogated, have run the

gauntlet of neurological treatment for months and even years, and are finally relieved quickly and precisely by the removal of the peripheral disturbance. We all know that excruciating pain borne even for a short time or pain of any kind wherever located, if long continued, will beget a general demoralization of the nervous centers simulating nervous exhaustion. Surely all of us, whether specialists or workers in the general field, should try to save our patients pain, with a view to the husbandment of their nerve force. From infancy, the growing child should have its teeth guarded with a view to prevent toothache and the consequent nerve disturbance. The mothers of the world should be placed in the best possible condition for the pangs of maternity, remembering the element of poisoning, how susceptible the nervous centers are to being poisoned. Thus elimination, cleansing of all the emunctories, should be the rule, particularly during the pregnant period, and then every possible pain should be prevented. More rapid recoveries would follow and parturition would result in less loss of nerve force.

Indeed, there is no special line of study which the worker in general medicine or the family physician should apply himself to more assiduously than the nervous system. Just in so far as he can, this particular laborer in the medical vineyard should be a neurologist, for it is a fact that all will admit that after all the nervous system represents our main capital. All that will develop it and maintain it and prolong its usefulness, should be known and made a part of the armamentarium of the general practitioner. The neurological author of "Current Fallacies" about neurasthenia, previously quoted, read a tirade in this Society a few years ago against gynecology (which by the way, was never answered), but may we not say that the criticism which may justly be directed toward the specialist who runs too much in grooves, will apply in a most pronounced way to the neurologist who dwells too much upon his particular line of thought.

In the language of the present President of this Society, the brainy and brilliant Outten, "the psychiater, whose curious art is oft too finely wrought, syllogizes mind oft while his own is pathologized by thought." In other words, the neurologist is in danger of laying too great stress upon his particular part of the anatomy and is tempted to misinterpret symptoms and dislocate disease. To him, unless he have a care, every victim of suffering or discomfort is a bundle of nerves gone wrong. The most successful workers in this field are those whose emotional centers have been kept in reserve and whose intellectual centers have been most strongly developed from the beginning and they base their work upon a foundation of broad general practice. The neurologists, like all the rest of us, should remember that every man becomes largely the crystallized result of all that he has seen, of that which he has associated with, and of that with which he has been brought most closely in contact. The psychiater then should constantly guard himself against exaggerating the neurological phenomena which present themselves to his view. He and the rest of us should remember that it is all very well to declaim against the specialist who interprets all headaches as being due to a necessity for eye-glasses, or the one who prefers to glide ever and always only in gynecic grooves, but some of our neurological brethren, God bless them, have often been known to misinterpret and exaggerate symptoms. Admitting for the sake of argument that many a woman suffering from a sore brain or a sorrowing heart has received treatment for a sore womb, that the womb of the world has been twisted and twirled in excess, that the docile, gentle and inoffensive ovary has not often enough been permitted to blush unseen and waste its sweetness upon the silent air, but all too oft has been rudely snatched from its sacred lair when it never had been guilty of doing anybody harm, still the fact remains that gynecology has relieved more sorrows, brightened more homes, saved more precious lives, and will go on saving more millions of lives that exist now only in the womb of the future than all of the other surgical specialties combined. It is the novices only who rush in where angels fear to tread, and act upon the idea that a woman's anatomic, physiologic and pathologic world is her womb. We should none of us, however, throw stones at each other, for the bulk of those in the medical profession (and out of it, too, for that matter) this side of Heaven, have their houses composed chiefly of glass.

I have in my records a half dozen cases of men of affairs approaching the fair, fat and forty age, where success had come to them after many weary years of labor; leisure, responsibility, over-eating and constipation followed; then came headaches, brain pressure, anxiety, insomnia, morbid fears followed by neurological opinion suggesting nervous exhaustion, which in its turn was followed by a frenzy of anxiety and dread of the future, all relieved within a few weeks by brisk purging, flushing of the kidneys, diaphoretics, fresh air, proper diet, a few nights of good sleep, and last but not least the instruction to buy and wear No. 16 collars instead of 14½ size which had been worn for years. Busy men when nearing the middle mile post of life as they increase in weight, often fail to realize that their necks grow more rapidly than their girth, and as a result they suffer from plain, everyday, tight collar headaches.

In a discussion of this subject at a recent meeting of this Society, a prominent member cited his own case of neurasthenia as one produced by prolonged loss of sleep and anxiety on account of sickness in his household, and that he was practically cured by many long continued hours of sleep. Here was a case of extreme fatigue diagnosticated nervous exhaustion, which was relieved by hours of sleep. Fancy, if you can, any one, the picture of intellectual health and animal vigor, as having had neurasthenia and been cured of it inside of a few weeks.

Constipation, excessive eating, lack of exercise and absence of proper exposure to fresh air upon the part of one of the strongest, most healthy looking and most robust members of our profession, resulted in a collapse which was interpreted as neurasthenia and treated as such, and kept under treatment for several years and the victim is not well yet, and the question may well be asked whether he ever will be. His neurologist flattered his vanity by telling him that he had neurasthenia as the result of overwork. Overwork forsooth! A practical all around physician would have inquired into his habits of life and ascertained the fact that he was a gourmand, that he ate as much of the richest food, being possessed of epicurean tastes, as would have been sufficient for three men. Being a specialist, with his work confined almost entirely to ill-ventilated offices in an old

styled, illy plumbed house on one of the prominent thoroughfares of the downtown portion of the city, the conditions were favorable to accumulation of poisons. He was in the position of a furnace supplying force to a mechanism wherein the fuel was shoveled in, in enormous quantities, a poor draft was given, the amount of oxygen was not sufficient, the ashes of combustion and clinkers were not properly removed and as a result there was an explosion upon the part of the outfit. Had the doctor referred to, fallen into the hands of an all-around many-sided physician, he would probably have been purged early and often for at least a week, for it would have taken that length of time however energetic his doctor might have been, to have cleared out the accumulations in that alimentary canal. At the same time his kidneys would have been flushed with a view to the more complete removal of poisons which are eliminated through this channel. The activity of the skin would have been encouraged, and during this time the poisoned nerve centers having unfitted him for exercise, he would have been furnished muscular exercise through the medium of massage. I venture the opinion that he would have been rid of his leucomaine and ptomaine poisoning within a very short time, and having been placed upon proper diet and instructed to take proper exercise both in walking and horseback riding, he would have been in shape for work promptly.

Malaria, cold and rheumatic conditions are often potent factors of so-called cases of neurasthenia. Chilling of the surfaces even if malaria be ruled out, and certainly where the system is depressed, no matter what the case we may have under our care, malaria can not often be ruled out of our philosophy, particularly in the Mississippi Valley. But even though it be not considered, with the nervous system, (which after all is our power of resistance against disease) below par, the susceptibility to cold so-called, is great. Chilling of the surfaces, driving the blood inwardly and interrupting the equilibrium of the circulation, still further adds to the difficulties which confront us, and begets a condition of disease which has been long considered under the term of rheumatic, to which Dr. Hans Froelich in a paper recently presented to the profession, has given the name of lymphostasis (*Medical Mirror*, January, 1894).

Dr. Froelich says that with such patients there is always too rich a supply of food with too little combustion, caused by insufficient peristaltic and voluntary motion. These circumstances, single or combined, then cause an engorgement of the concentrated lymph, which condition is first noticed in the fissures and tissue spaces, the source of the lymph system.

It will thus be seen that the rheumatic and gouty elements, the presence of uric acid and the deposit of fibrinous materials along the track of nerves, in other words, a lymphostasis should be constantly kept in mind, and so too the fact that in proper regulation of diet, massage and flushing of eliminative organs lies relief.

In closing, I desire to emphasize the following points:

1. The majority of cases of so-called neurasthenia are either victims of (*a*) nerve weariness dependent upon misdirected energy without proper rest at proper intervals; and (*b*) nerve poisoning, the result of constipation, improper food and accumulation of the ashes of combustion, leucomaines and ptomaines—a disposition to use the stomach too much and the rectum too little, and a failure to appreciate the importance of pure air as a rejuvenator of tired and poisoned nature; or else (*c*) nerve demoralization resulting from unrelieved peripheral irritations.

2. There is less harm in the victim of disease directing his attention to special organs and peripheral points as the offenders of his comfort, than there is in having his mind absorbed in the contemplation of his nervous apparatus. In other words, it is an evil day for any one, man, woman or child, when the attention is concentrated upon the nerve centers, when the energies are directed toward watching nervous symptoms; in fact, it would be well for them if they never had a knowledge of the anatomy and functions of their nervous system, and this knowledge should be the last presented to them for consideration.

The best way to cure the discomforts occasioned by nerve weariness and nerve poisoning, and even those of nervous exhaustion, which are far more serious, is to prevent them; and it should be our constant desire to impress upon the families with which we come in contact the importance of building up the nerve capital of the child from the day of its birth and even before its birth, indirectly through the mother. We should endeavor to teach the burden bearers and battle wagers of the world that the fruit bearers have a nervous system more easily fatigued and more easily put on edge than their own. Then will we help them to realize that marriage is not a failure. With a view to the building up and maintainment of nerve force and guarding against nervous bankruptcy, both on the part of parents and children, we should teach them the importance of proper food, proper clothing and a properly opened condition of the animated system of sewerage. We should impress them with the fact that the daily visit to the Temple of Cloaca, with satisfactory results, is quite as important as the morning and evening prayer. When we recall the fact that 90 per cent. of the women of the world are much more constipated than the traditional owl, we will realize what room there is for improvement in this direction. A special missionary work should be entered into on the part of the profession among the teachers of our schools, for they need not only to know the importance of the flushing out of the alimentary canal, so far as they themselves are concerned, but its importance as a stimulator of the wit and the ability of the young idea in the direction of shooting properly. All along the line we are safe in keeping in mind the cardinal principles both as preventers and curers of the conditions mentioned, namely, elimination, disinfection, nutrition, tranquilization and oxygenation. Large quantities of pure water serve, whether preceded by medicament or not, as excellent stimulators of the eliminative organs.

Food that is easily digested and readily assimilated is important, and in this connection the fats, hydrocarbons, are more valuable even as nerve builders than as enemies to tuberculosis, and that is saying a great deal. Under this head, butter and milk stand preëminent.

Sleep is indeed "tired nature's sweet restorer," and it represents the life of the individual. Mothers should be impressed with the fact that children who

are poor sleepers run the chance of growing up with wrecked nervous systems. The average mother, as well as the average child, does not sleep enough.

The limits of this paper will permit of but a few points in the way of treatment. As a sleep producer, I believe that trional in 10, 20 or 30 grain doses, is the best remedy we have at hand. No exaltation, no depression and no bad effects follow its use. I observe in a recent number of one of my exchanges, a very pronounced tribute to this remedy by Dr. J. B. Mattison, of Brooklyn, N. Y., a high authority. His experience is entirely in harmony with my own.

The digestion should be helped in order to secure nutrition in better form in every way possible. I have no sympathy with those who inveigh against the general aids to digestion. Just as well say that when a man's leg is broken or injured he should not wear a crutch as to say that when the digestive powers are crippled, crutches are not indicated. Pepsin which assists in the digestion of albuminous foods, and diastase which directs its energies toward the digestion of starchy foods are of value. Papoid is also an excellent helper of digestion. Remembering that we have a condition of general debility all along the line, tonics are certainly indicated, and there is none better in all the world as a toner up of digestive and general nerve activity than strychnia.

For long, arsenic in the form of Fowler's solution has been a sheet anchor in the treatment of chorea and allied conditions, and believing as I do that in neurasthenia, which is a disease of adult life, that the conditions are almost identical to those which are present during childhood when chorea prevails, (hysteria, chorea and neurasthenia are all a species of physical insanity) I consider arsenic of great value. Within the past few months I have administered to these cases a preparation which was introduced to the medical profession by Dr. Wm. F. Barclay, of Pittsburg (one of the most reputable physicians in the State of Pennsylvania, a man who is an expert chemist and a thoroughly reliable observer) and to which has been given the name of arsenauro, which is in fact a beautiful and attractive liquor of the bromid of gold and arsenic. (Every 10 drops, the ordinary dose, contains one thirty-second grain of gold bromid and one thirty-second grain of arsenic bromid. I have a very large number of patients using this compound in 10 drop doses three or four times a day and uniformly with good effect.

Let us not forget that the majority of these cases, whether spurious or bonafide neurasthenia, have usually a rotten, crowded condition of the alimentary canal, a long history of constipation leading up to leucomaine and ptomaine poisoning and that the entire system of secretory glands is deficient and perverted in activity, and that flushing out of the emunctory system is called for. As an all around excellent stimulator of elimination, tongalin (Liq. tong. salicylat—Mellier) is indicated. Pains which are present are well met by the salicylic acid contained in the compound and which is of the best form, being made from the oil of wintergreen. The pilocarpin, cimicifuga and colchicin which it contains are all stimulators of elimination. I usually administer from a teaspoonful to a tablespoonful at bedtime and oftener if necessary in order to clear out the bowels thoroughly.

In cases of la grippe which are accompanied by so-called rheumatic symptoms and great nervous prostration, the tongalin is particularly indicated as a flusher of the sewerage system.

Change of scene and air are often indicated, and to my mind, no better place in all America can present itself than Hot Springs, Arkansas. Here we have the elevated mountainous atmosphere, the ideal water and facilities furnished for drinking it in large quantities, and being hot it is all the more promptly eliminated, and at the same time the bathing in the hot water is very beneficial in the direction of relieving the pains which so frequently accompany these conditions.

The judicious administration of electricity is certainly indicated, but I am strong in the belief that more are benefited by judicious massage, both manual and mechanical, then by electricity.

WHAT THE GENERAL PRACTITIONER SHOULD KNOW ABOUT DISEASES OF THE EYE.

BY FRANK TRESTER SMITH, A.M., M.D.
CHATTANOOGA, TENN.
SECRETARY OF THE TRI-STATE MEDICAL SOCIETY OF ALABAMA, GEORGIA AND TENNESSEE.

In the issue of the JOURNAL of February 3 Dr. W. A. Fisher reviews an article of mine on the above subject read before the Tennessee State Medical Society.[1] In the article I stated that it was not expected that every doctor should become a specialist but that he should understand enough to know his ignorance; that it was not necessary for him to be able to fit glasses but he should understand the main indications for the use of spectacles, viz.: Presbyobia, diminished vision, asthenopia, headache, functional nervous diseases, etc.; he should be able to diagnose between cataract and glaucoma as a cause of poor vision, and also be familiar with the diagnosis of inflammations of the conjunctiva, cornea and iris; he should be informed on the indications and contra-indications for the use of atropin, eserin and similar drugs. My article was an endeavor to outline a statement of the *minimum* amount of knowledge which a general practitioner should possess who desires to practice medicine conscientiously. More information on these subjects might be useful, but the above seemed to me to be indispensable. I advocated, further, that the doctor should not attempt to use the ophthalmoscope. It is on this latter point that Dr. Fisher takes issue with me, and he truly states that my position is different from that of most of the teachers of the day.

To this I can reply that it accords with the practice of the day. The great mass of practitioners have decided that it is not best that they should attempt to use the ophthalmoscope. It has seemed to me that one of the main causes that the doctors know so little of this branch is that their teachers try to cover too much ground and the medical student gets a working knowledge of very little in most of our colleges.

The Doctor is unfortunate in the examples he presents in advocating the use of the ophthalmoscope by the general practitioner. He asks: "It is of importance to diagnose glaucoma early, but if he is barred from the use of the ophthalmoscope how can he make the early diagnosis?"

[1] Alabama Medical and Surgical Age, June, 1893. Virginia Medical Monthly, July, 1893. Atlanta Medical and Surgical Journal, August, 1893. American Practitioner and News, December, 1893.

The diagnosis can certainly be made by the increased tension which does not require a great amount of skill if it be at all marked. The diagnosis with the ophthalmoscope depends on the excavation of the optic nerve mainly and this does not occur *early*. In the case of glaucoma cited, the pain and diminished vision would suggest glaucoma. Confirming this there would have been an anesthetic hazy cornea, a shallow anterior chamber, a dilated pupil, enlarged episcleral veins, a history of halos and increased presbyopia, although some of these symptoms would have been wanting.

The case of Dr. Shinn was one of amblyopia from tobacco or alcohol, and could have been diagnosed by the central scotoma for red more certainly than by the ophthalmoscope. The Doctor relates a case of cataract and asks why the ophthalmoscope should be ignored. Practically no one makes a diagnosis of cataract with the ophthalmoscope except it be in incipient cataract. A general practitioner ought to be able to diagnose a cataract which was so far developed as to cause the sufferer to be sent to the asylum, especially if he should dilate the pupil. The gradually failing vision without inflammation and the age of the patient would indicate the trouble which would be confirmed by the appearance of the pupil. As to fitting glasses, I said the practitioner need not do this work. So far as the specialist is concerned it would be better if spectacles were fitted by doctors than by jewelers and traveling charlatans. Many defects of the eye would be discovered which are now unnoticed. The more the profession know of the eye the better for the competent oculist. From a theoretical standpoint it might be better for all practitioners of medicine to master the ophthalmoscope, but I believe the student would better spend the time in studying the diagnosis of glaucoma and cataract by other means or with physical diagnosis and kindred studies. The graduate should be required to be informed on the matter indicated in the article but it is not necessary for him to handle the ophthalmoscope nor is it expedient as a rule that he should do so.

CLINICAL HISTORY OF THE CASE OF PRESIDENT JAMES ABRAM GARFIELD.

BY ROBERT REYBURN, A.M., M.D.

PROFESSOR OF PHYSIOLOGY AND CLINICAL SURGERY MEDICAL DEPARTMENT HOWARD UNIVERSITY, WASHINGTON, D. C., AND ONE OF THE ATTENDING SURGEONS IN THE CASE OF PRESIDENT GARFIELD.

(*Continued from page 502*).

IV.

August 8, 6 A.M. He had five ounces of koumiss. At 8 A.M. seven ounces of koumiss. At 8:40 A.M. he took five ounces of claret. August 8, 8:30 A.M. Temperature 98.4; pulse 94; respirations 18. August 8, 12 M. Temperature 100.2; pulse 104; respirations 20. August 8, 7 P.M. Temperature 101.2; pulse 108; respirations 19.

The President's wound was dressed at 8 A.M. and it being evidently necessary to make a more free opening in the wound to facilitate the escape of pus, he was etherized this morning, and the operation performed. Dr. Reyburn administered the ether, and it acted very quickly and pleasantly. The incision was extended downwards and forwards, and a counter-opening was made into the track of the bullet below the margin of the twelfth rib; this was done by Dr. Agnew. Two drainage tubes were then inserted. The President bore the operation well. He was given some claret at 12 M. At 1 P.M. he took seven ounces of koumiss which he vomited soon afterwards. He took no nourishment until 5 P.M. and then only small doses of milk and lime water were given him during the evening until his stomach recovered from the nausea resulting from the etherization. The wound was dressed as usual at 6 P.M.; it looked well, but had a profuse discharge of pus and bloody serum. The President slept well during the night, but had fever which partially abated towards morning.

August 9, 8:30 A.M. The President has a higher temperature than he has had for a number of days at this hour of the morning. At 8 A.M. his wound was dressed, and it was found that the pus was being freely discharged through the counter opening made yesterday. August 9, 8:30 A.M. Temperature 99.8; pulse 98; respirations 19. August 9, 12:30 P.M. Temperature 99.7; pulse 104; respirations 19. August 9, 7 P.M. Temperature 101.9; pulse 106; respirations 19.

Since yesterday afternoon small quantities of liquid food given at short intervals have been retained, and during the day larger quantities were administered without gastric disturbance. He had an enema at 5 P.M. The wound was dressed at 6 P.M. The track of the new wound was found to be closed evidently causing some irritation. The President slept well (without the use of any anodynes) but sweat a good deal during the night, and complained of weakness this morning (August 10). Professor Agnew left at 2 P.M. August 9.

August 10, 5:30 A.M. He was given five ounces of milk with half an ounce of lime water. At 8 A.M. the wound was dressed, and a profuse discharge of pus came from the new opening, which evidently relieved him very much. His temperature fell to normal this morning. August 10, 8 A.M. Temperature 98.5; pulse 104; respirations 19. August 10, 12:30 P.M. Temperature 98.6; pulse 110; respirations 18. August 10, 7 P.M. Temperature 101; pulse 108; respirations 19.

August 10, 8:15 A.M. He took half an ounce of brandy. At 9 A.M. he took breakfast, a little chicken toast, potatoes and strawberries. At 11:15 A.M. he had half an ounce of brandy. At 12:15 P.M. he had six ounces of milk with half an ounce of lime water. At 3 P.M. he had six ounces of koumiss. At 4:15 P.M. he had half an ounce of brandy. At 5:15 P.M. The President has passed quite a comfortable day, and had no rise of temperature until the evening. The wound was dressed at 6 P.M. and was much improved in appearance, and with a free discharge from the deeper parts of the wound. He has taken half an ounce of brandy four times during the past twenty-four hours and an adequate supply of liquid food.

August 11. The President slept well during the night only awaking once. At 4:30 A.M. he had six ounces of milk. At 6:30 A.M. he had six ounces of koumiss. At 8:30 A.M. he had three ounces of bouillon, and two teaspoonfuls of meat juice. At 10:40 A.M. he had for breakfast the same as yesterday. The wound drained well, and there was not such an accumulation of pus as usual, in the deeper parts of the wound. Granulations are showing themselves on

Entered according to Act of Congress, May 29, 1893, by ROBERT REYBURN, M.D.

the edges of the wound. August 11, 8 A.M. Temperature 98.5; pulse 104; respirations 19. August 11, 12:30 P.M. Temperature 98.6; pulse 110; respirations 19. August 11, 7 P.M. Temperature 101.2; pulse 108; respirations 19.

At 12 M. he had six ounces of milk. At 2 P.M. he had four ounces of bouillon, and two teaspoonfuls of meat juice. At 4:10 P.M. he had six ounces of koumiss. During the day he had four doses (of half an ounce each) of brandy, at intervals of four hours. The President had an excellent day until 4 P.M. when the febrile rise took (101.2). On dressing the wound at 6 P.M. the flow of pus not as abundant as usual. After dressing the wound the President seemed to feel relieved, and fell asleep about 6 P.M. Professor Hamilton arrived at 10 P.M.

August 12, 1:15 A.M. he had six ounces of koumiss, and the same at 6 A.M. At 8 A.M. he was given half an ounce of brandy. During the night he was somewhat restless, and awoke at 5:30 A.M. After being sponged off with alcohol he went to sleep again and slept until 7:30 A.M. At 8:40 A.M. he took two ounces of bouillon, and two teaspoonfuls of beef juice. He breakfasted at 10:50 A.M. on a raw beef sandwich, and milk toast and seemed to enjoy it. No brandy was given at noon at the request of Professor Hamilton. At 1 P.M. he had six ounces of koumiss, and at 3 P.M. he had six ounces of milk. At 5:30 P.M. he had six ounces of koumiss. Dr. Bliss was compelled to go home to-day at 1:30 P.M. as he was suffering from septic poisoning received through a cut in his hand while dressing the wound of the President on August 8.

August 12, 8:30 A.M. Temperature 98.6; pulse 100; respirations 19. August 12, 12:30 P.M. Temperature 99.3; pulse 100; respirations 19. August 12, 7 P.M. Temperature 101.2; pulse 108; respirations 19.

The President has been doing fairly well to-day, though slightly feverish. It was determined to abstain from giving the President any brandy or other stimulants for the term of twenty-four hours. The wound was dressed as usual, and the discharge at both morning and evening dressings was not as abundant as customary. He had the same febrile rise (101.2) that he had last evening.

August 13, 8:30 A.M. The President did not sleep as well as usual during the early part of the night. After midnight, however, his sleep was more refreshing, and only broken at long intervals. This morning his temperature did not fall to the normal point (as it has done for several days past) and remained at 100.8 during the morning dressing. After the morning dressing he improved, and his temperature fell to 99.2. August 13, 8:30 A.M. Temperature 100.8; pulse 104; respirations 19. August 13, 12:30 P.M. Temperature 99.2; pulse 102; respirations 19. August 13, 7 P.M. Temperature 100.7; pulse 104; respirations 19.

August 13, 2 P.M. The fever indicated in the morning bulletin has gradually receded and the President is in good spirits and expresses himself as feeling very comfortable. The day is extremely oppressive, over 90 F. in the shade; but the President's room is kept comparatively comfortable by means of the cooled air, which is forced into it, the temperature being kept about 80 F. Early this morning at 3 A.M. he awoke and took six ounces of milk; at 6:45 A.M. he had six ounces of koumiss; at 8 A.M. he had three and one-half ounces of bouillon, and two drachms of meat juice. The stimulants which had been suspended during the past twenty-four hours were resumed to-day. The President showed such exhaustion after their suspension that the unanimous opinion of the surgeons was in favor of their resumption. Professor Hamilton left for New York at 10:15 P.M. At 8 A.M. the President was given half an ounce of brandy; at 10:30 A.M. he breakfasted on a little stewed dried beef; toast, potatoes and a little onion. At 11 A.M. he had six ounces of milk. At 1:10 A.M. he had three ounces of chicken jelly, and half an ounce of brandy. At 4 P.M. he had six ounces of milk and at 5 P.M. he had an ounce of brandy and three grains of bisulphate of quinia. At 5:45 P.M. he had four ounces of bouillon, and two drachms of meat juice. The President's wound was dressed as usual this morning and evening, and a free discharge of pus came from it at both dressings.

August 14. The President slept fairly well during the night, but was slightly feverish, though he said that he felt quite comfortable. The morning dressing seemed to tire him, and there was a good deal of irritability of the stomach. At 2:15 A.M. he had six ounces of milk; at 5 A.M. six ounces of koumiss; at 8 A.M. half an ounce of brandy in six ounces of milk, and three grains of bisulphate of quinia. He breakfasted at 10:15 A.M. on a little steak, potatoes, and a few blackberries. At 12 M. he was given three grains of bisulphate of quinia with half an ounce of brandy; soon after this he vomited. His temperature this morning at 8 was one degree less than at the same hour yesterday morning. His temperature at the evening dressing of the wound was about the same as that of last evening.

August 14, 8:30 A.M. Temperature 99.8; pulse 100; respirations 18. August 14, 12:30 P.M. Temperature 99.8; pulse 100; respirations 18. August 14, 7 P.M. Temperature 100.8; pulse 108; respirations 19.

August 14, 12:30 P.M. He was given three drachms of beef juice, which he retained. He then went to sleep until 3 P.M. when he awoke and shortly afterwards vomited. At 5:30 P.M. he again vomited about four ounces of sour liquid tinged with bile. All nourishment was suspended, and he was given a teaspoonful of the following mixture in water every four hours:

R Tincture lavandulæ comp . . . . . aaj drachm.
et tincturæ cardamoni comp: . . . aaj drachm.
Acidi carbolici . . . . . grs. iv.
Alcohol: diluti . . . . . jss uncia.
Msce.

At 9:45 P.M. he vomited again, and at 9:50 P.M. he was given one drachm of aromatic mixture. At 11:30 P.M. he vomited six ounces of greenish biliary fluid. He complained of pain in the epigastrium, had considerable restlessness with fever. His pulse reached 120 per minute.

August 15, 3 A.M. The President has awakened at intervals of about half an hour, and complains a good deal of the pains and distress in the stomach. He has retained two teaspoonfuls of milk and lime water, which have been given every half hour since 11 P.M. (of August 14). His pulse is still 120 and very weak. After consultation with Drs. Bliss and Woodward, Dr. Reyburn gave the President three-sixteenths of a grain of sulphate of morphia hypodermatically. After receiving the injection he went to sleep in a short time and slept soundly until 7:30 A.M.

August 15, 8:30 A.M. Temperature 100.2; pulse 108; respirations 20. August 15, 12:30 P.M. Temperature 99; pulse 118; respirations 19. August 15, 7:30 P.M. Temperature 99.6; pulse 130; respirations 22.

During the morning the President's stomach was very irritable, and he was given only three teaspoonfuls of milk and lime water at 7:30 A.M. which was all the nourishment he was able to retain. For the irritability of the stomach he was given twelve powders each containing one-twelfth of a grain of calomel with one grain of subnitrate of bismuth. He took one of these every hour until seven were taken.

The condition of the President at this time excited very grave apprehensions in the minds of the attending surgeons. His stomach could not assimilate food and just as soon as this occurred he rapidly developed symptoms of exhaustion. During the afternoon and evening his pulse went up to 130 per minute, whilst his temperature kept falling. After consultation, alimentation by the rectum was determined on, and there is every reason to believe that our doing so saved the President from rapidly impending death. The following was the formula used, viz: The yelk of one egg, one ounce of bouillon, one and a half ounces of milk, one half ounce of whisky, and ten drops of deodorized tincture of opium. Mix and administer at the temperature of 100 F. as an enema per rectum. The administration of these enemas was highly beneficial to the President, and he showed the restorative and invigorating effect of their use almost immediately. From August 15 until August 18 he was unable to take any food whatever (except three teaspoonfuls of beef essence) and in fact for about one week subsequent to that date he was nourished almost exclusively in the same way. At 10:30 A.M. he had nutritive enema (see formula given above). At 9:15 and at 11 P.M. the vomiting again recurred, and very hot water in teaspoonful doses was given; this seemed to relieve the nausea.

August 16. During the night the President suffered from nausea until 3 A.M. when a nutritive enema was given him, which he retained. After this he went to sleep, and slept until 7:30 A.M. At 8 A.M. the wound was dressed as usual. There was a free discharge of pus from the wound, and the President was much exhausted by the dressing. Had nutritive enemas at 3:15 A.M., at 8 A.M., at 12 M., at 4. P.M. and at 8 P.M. During the afternoon the President reacted a good deal, and seemed to be much better. At 5:30 P.M. he vomited about three ounces of a greenish brown fluid with but little odor. The wound was dressed at 6 P.M. It seemed rather dry, but there was a fair amount of discharge from it.

August 16, 8:30 A.M. Temperature 98.6; pulse 110; respirations 18. August 16, 12:30 P.M. Temperature 98.3; pulse 114; respirations 18. August 16, 7 P.M. Temperature 98.9; pulse 120; respirations 18.

August 16, 7 P.M. Temperature 98.9; pulse 120; respirations 19.

August 17. At 3 A.M. the President had nutritive enema, and again at 8 A.M. He slept well during the night, and looks better this morning. August 17, 8:30 A.M. Temperature 98.3; pulse 110; respirations 18. August 17, 12:30 P.M. Temperature 98.7; pulse 112; respirations 18. August 17, 6:30 P.M. Temperature 98.8; pulse 112; respirations 18.

At 10 A.M. he fell asleep, slept soundly and awoke refreshed at 11:15 A.M. He did not vomit during the day, and the nutritive enemas were well retained, and seemed to nourish him sufficiently. Professor Agnew has been here continuously on duty since 11 A.M. of August 14, and as the grave symptoms presented by the President seemed to demand the presence of all the surgeons, Professor Hamilton was sent for and arrived at 10 P.M., August 16. During the afternoon a teaspoonful of beef extract was twice administered by the mouth, and was retained. Small quantities of cold water and cracked ice were also given without causing nausea. At 12:30 P.M. the President was given the nutritive enema; at 12:40 P.M. one drachm of extract of beef; at 1:45 P.M. another drachm of extract of beef; at 5 P.M. a second nutritive enema, and at 11:45 P.M. a third drachm of extract of beef. During the day the President seemed quite comfortable until about 9 P.M., when he complained of pain and slight swelling of the right parotid gland. The wound was dressed as usual night and morning. The inner track of the wound seems to be closing up, and the eleventh rib at the seat of the fracture is covered with granulations.

August 18. The President slept well almost all the night, and awoke at 6:30 A.M. apparently much refreshed. He was then washed and sponged with alcohol, and his position changed. During the night the swelling of the right parotid gland had increased very rapidly, and the following local application was applied:

R. Iodoformi . . . . . .
Et balsam Peru āā . . . . . drachm j.
Collodii. . . . . uncia j.
Misce.

At 7 A.M. he had nutritive enema, and also at 1:30 P.M. At 9:30 A.M. he had half an ounce of koumiss, and the same at 10 A.M. and at 11 A.M. At 2:30 P.M. he had two ounces of koumiss, and two tablespoonfuls of milk gruel. At 4:30 P.M. he had nutritive enema. At 7 P.M. he was given three tablespoonfuls of milk gruel and at 11:30 P.M. he had nutritive enema.

August 18, 8:30 A.M. Temperature 98.8; pulse 104; respirations 17. August 18, 12:30 P.M. Temperature 98.4; pulse 108; respirations 18. August 18, 6:30 P.M. Temperature 100; pulse 108; respirations 18.

The President asked for and retained several small portions of liquid nourishment during the day and evening. He bore the evening dressing fairly, but complained a good deal of the pain in the parotid gland. Professor Agnew left this evening for Philadelphia.

August 19. The President was somewhat restless and slightly feverish from 10 P.M. last night to 2 A.M. this morning. At that hour he began to perspire, and then fell asleep, and slept until 7:30 A.M. At 8 A.M. the wound was dressed, and the soft catheter used to wash out the wound was passed along the lower track of the wound twelve and a half inches, and quite a free discharge of pus came from the wound.

At 7 A.M. he had four ounces of koumiss; at 7:30 A.M. nutritive enema; at 8:30 A.M. four ounces of koumiss; at 10:15 A.M. two ounces of milk gruel. At 11:20 A.M. he began to perspire, having had a slight rigor. He was rubbed dry, and wrapped in warm woollen cloths, with heat applied to his extremities. There is a slight swelling of the right side of the face, around the right eye, but the pain

and swelling of the right parotid gland has much diminished. There being a tendency to diarrhea one drachm of subcarbonate of bismuth was given to the President at one dose. At 1 P.M. he had nutritive enema; at 3:30 P.M. three ounces of milk gruel; at 4 P.M. six ounces of koumiss; at 6:30 P.M. nutritive enema and at 7:20 P.M. three ounces of milk gruel. At 7:30 P.M. the bowels were moved.

August 19, 8:30 A.M. Temperature 98.4; pulse 106; respirations 17. August 19, 2:30 P.M. Temperature 98; pulse 106; respirations 17. August 19, 2:30 P.M. Temperature 100; pulse 106; respirations 18.

Professor Hamilton left for New York in the 2:10 P.M. train to-day. Professor Agnew came from Philadelphia to Washington to-night (August 19).

August 20. The President slept tolerably well, but wakened several times during the night. He stood the dressing of the wound very well this morning. The President has slightly relaxed; he had two loose passages, one at 1 A.M. and one at 12:15 P.M. At 1:30 A.M. he had nutritive enema; at 3 A.M. three ounces of milk gruel; at 8:30 A.M. five ounces of koumiss; at 10:20 A.M. nutritive enema; at 12:20 P.M. three drachms of beefsteak juice; at 2 P.M. three ounces of milk gruel; at 4 P.M. three ounces of koumiss, and at 6:30 P.M. three ounces of milk gruel. During the day the President took in all nine ounces of milk gruel, and eight ounces of koumiss, by the mouth. At the morning dressing the wound looked well, and the pus was laudable in character.

After the operation of August 8 the flexible tube used to wash out the wound at each dressing readily followed the track of the ball to the depth of three and a half or four inches. At the dressings, however, a small quantity of pus came, as was believed from the deeper parts of the wound, from the part of the track beyond the above mentioned point. The pus flowed either spontaneously or after gentle pressure had been applied over the anterior surface of the right ilium. This deeper part of the track was not reached by the tube until yesterday morning, when the separation of a small slough permitted the tube to pass downwards and forwards for the distance of twelve and a half inches from the external opening of the last incision.

August 20, 6:30 P.M. The President was somewhat exhausted by the evening dressing, and has a little more fever this evening. To-day the following ointment was ordered for application to the inflamed parotid gland:

℞. Unguenti belladonnæ.
Iodoformi.
Balsam: Peruvian.
Misce.

The swelling of the right parotid gland appears to be unchanged.

August 20, 8:30 A.M. Temperature 98.4; pulse 98; respirations 18. August 20, 12:30 P.M. Temperature 98.4; pulse 107; respirations 18. August 20, 6:30 P.M. Temperature 100; pulse 110; respirations 19. At 10 P.M. he was given nutritive enema.

August 21. The President awoke more frequently than usual during the night. At 3:40 A.M. he fell asleep, and slept soundly until daybreak. He took liquid nourishment in small quantities during the night. The wound was dressed as usual at 8:20 A.M. The secretion from the outer surface of the wound was rather scanty, and there was not so much secretion as usual from the deeper track of the wound.

August 21. At 3:30 A.M. he was given four ounces of koumiss; at 4:50 A.M. three ounces of milk gruel; at 7 A.M. nutritive enema; at 7:45 A.M. four ounces of koumiss; at 10:10 A.M. three ounces of koumiss; at 12:45 P.M. four ounces of milk gruel. At 1:30 P.M., in endeavoring to hawk up the secretion from the right parotid gland, which was very tenacious, he brought on an attack of vomiting. At 3:20 P.M. he was given the nutritive enema. At 5:15 P.M. he vomited six ounces of biliary fluid of a greenish yellow color. The President having vomited three times during the afternoon, the administration of food by the mouth was temporarily suspended. The parotid swelling is painless but stationary. August 21, 8:30 A.M. Temperature 98.8; pulse 106; respirations 18. August 21, 12:30 P.M. Temperature 99.4; pulse 108; respirations 18. August 21, 3:30 P.M. Temperature 99.2; pulse 108; respirations 18.

President Garfield was some of the time entirely, and all of the time very largely, sustained by rectal feeding from the 14th of August until his death on September 19. The value of this method of supplying waste in grave disease has never been more strikingly shown than in this instance, because in all probability there was never a patient more closely observed by his medical attendants, and because the quantity and quality of the rectal diet were most carefully regulated, both as to mode and time of administration. During the stage of inflammation of the parotid gland (eight days) this mode of sustenance was entirely relied upon, he being unable to take any food by the mouth and stomach, and only very small quantities of cracked ice and water, which were frequently rejected.

The quantities carefully measured, were prepared at the dispensary of the Surgeon-General by Hospital Steward W. F. Crusor, U. S. A., in accordance with the following formula:

"Beef Extract.—Directions: Infuse a third of a pound of fresh beef, finely minced, in fourteen ounces of cold soft water, to which a few drops (four or five) of muriatic acid and a little salt (from ten to eighteen grains) have been added. After digesting from an hour to an hour and a quarter, strain it through a sieve and wash the residue with five ounces of cold water, pressing it to remove all soluble matter. The mixed liquid will contain the whole of the soluble constituents of the meat (albumen, creatin, etc.), and it may be drank cold or slightly warmed. The temperature should not be raised above 100 F.; as at the temperature of 113 F., a considerable portion of the albumen, a very important constituent, will be coagulated."

Two ounces of beef extract, two drachms of beef peptonoids, and five drachms of whisky were given with scrupulous regularity every four hours, day and night. Occasionally five to fifteen drops of deodorized tinct. opii were added as an additional nerve stimulant and anodyne, and also to secure retention of the enema. They were usually retained without causing any discomfort on the part of the patient, and, as a rule, once in twenty-four hours a discharge of healthy feces occurred, generally of such consistence and form as would justify the belief that digestion had taken place in the small intestine. For the first five or six days the yolk of an egg was added to the injections, but in the judgment of the surgeons was the cause of annoying and offensive flatus. This symptom was promptly relieved by discontinuing the egg, and temporarily adding about a drachm of willow charcoal to the enema. Charcoal tablets by the mouth were also occasionally used.

There was a strong desire on the part of the physi-

cians to discontinue the use of stimulants, but on each occasion when the attempt was made the pulse became more frequent and feeble, so that we were forced to resume their use. Later in the history of the case, after the removal to Elberon, alimentation both by the rectum and the mouth was found to be borne without evidence of peristaltic antagonism.

August 22, 8:30 A.M. Temperature 98.4; pulse 104; respirations 18. August 22, 12:30 P.M. Temperature 98.4; pulse 104; respirations 18. August 22, 6:30 P.M. Temperature 100.1; pulse 110; respirations 19.

A feeling of uneasiness prevailed to-day among the medical attendants in consequence of the unfavorable condition of the President. He is greatly troubled by the tenacious mucus which accumulates in the back of the throat, and in the effort to free his mouth and throat he twice brought on attacks of vomiting yesterday. Happily after midnight the President who had been restless, fell into a sound sleep. He slept more quietly during the after part of the night, and has been able to retain liquid nourishment when taken by the mouth, as well as the nutritive enemas. During the day there was no recurrence of the vomiting and nausea. The parotid swelling is not materially smaller but is painless, and there is less of the accumulation of mucus in the mouth and throat. During the morning he took about twelve ounces of milk gruel and koumiss, and at 7 A.M. an enema of beef extract was administered. During the day for the first time was noticed a slight incoherence of speech, immediately after awaking from sleep. This seemed to disappear as soon as the senses became fully under control. The heat of the weather has somewhat moderated to-day, and it was not considered necessary to use the cooling apparatus for the President's room.

August 22, 2:10 P.M. The President has passed a quiet afternoon, and sleeps a good deal of the time. Up to the present time he has taken and retained twenty-four ounces of liquid nourishment consisting of milk porridge and koumiss. He also continued to take at stated intervals small quantities of the same kind of food during the evening without disturbance of the stomach. The wound was dressed as usual, and the process of repair seems to be going on in all parts of the wound exposed to view.

August 23, 8:30 A.M. Temperature 98.4; pulse 100; respirations 18. August 23, 12:30 P.M. Temperature 98.9; pulse 104; respirations 18. August 23, 6:30 P.M. Temperature 99.2; pulse 104; respirations 19.

August 23, 8:30 A.M. The President slept during the greater part of the night but awoke at intervals. He has taken since last night a larger quantity of liquid food by the mouth than in the corresponding hours of any day during the past week. During the night he received two nutrient enemas, and the use of the nutrient enemas was continued at longer intervals during the day. He continued to take liquid food during the afternoon and evening, and had no recurrence of gastric disorder. The parotid swelling remains unchanged, but the mucus which accumulates in the back part of the mouth is less viscid, and now gives but little trouble. This morning in addition to his koumiss and milk porridge, he was given the juice of a steak, which he took with relish. Professor Agnew, who has remained on duty since August 20, returned to Philadelphia to-day, having been relieved by Professor Hamilton. In spite of all our efforts to nourish the President he is emaciating so rapidly that it is distressing to look at him. His weight when he was wounded was 210 pounds, and his weight now is probably not more than 130 or 135 pounds. This emaciation is accompanied by such great exhaustion as to give rise to the most gloomy forebodings on the part of his medical attendants. During the last three or four weeks the President has often expressed the wish to be in his old home; he longed to be back in Ohio, "on the old sod once more; to walk down the streets of Cleveland, meeting and greeting familiar friends."

(*To be continued.*)

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

The Third Annual Meeting Held in Chicago, Sept. 12, 13 and 14, 1893.

AUGUSTIN H. GOELET, M.D., President.

(*Continued from page 514*).

A CONTRIBUTION TO THE ELECTRO-THERAPEUSIS OF SALPINGITIS.

DISCUSSION.

DR. A. LAPTHORN SMITH said that if this paper had been read before the Philadelphia Obstetrical Society, the author would be glad to escape from the room with his life. At the same time, he quite agreed with the author in his statements. He felt quite sure that the tubes can be catheterized. Dr. Wallace showed him in his Liverpool hospital six cases at one time, in which he had introduced a uterine sound into the tubes. Again, he had himself frequently had cases in which fluid accumulations in the tubes were discharged spontaneously. The source of the discharge had been proven by the use of clean, dry, cotton tampons. In view of these facts, why can not we empty the tubes in the natural way through the uterus? A few more papers of this kind, he thought, would stem the tide and control the present operating furor.

DR. N. W. WEBER, of Detroit, said that if there are no other triumphs to be ascribed to electricity than those achieved in the relief of ovarian neuralgia, and the great distress attendant upon pyosalpinx, and various pelvic adhesions, it certainly has accomplished a great deal. He could recall the sneering doubt with which the report of Dr. Sprague's second case was received in their State Society; yet he felt satisfied from what he had seen that the author was doing a great work. We should endeavor to suppress this great tendency to perform severe abdominal operations on all sorts of slight pretexts.

DR. MASSEY said that while appreciating this conservative surgery, it should not be forgotten that this work is for experts only. In 1888 he had himself brought the subject of treating such conditions by intra-uterine negative galvanization up before the Philadelphia Obstetrical Society. He succeeded at that time in emptying a number of tubes.

DR. SARAH A. STEVENSON, of Chicago, said that notwithstanding the law which has been laid down that electricity is contra-indicated whenever there is pus present, she had for a long time employed it in such conditions. Studying Bozeman's experiments in catheterization of the ureters, she had become convinced that it was entirely feasible to drain the Fallopian tubes in a similar way, but she had hesitated hitherto to employ it herself. She was therefore pleased to learn of Dr. Sprague's results.

DR. GEHRUNG remarked that as electricity is known to cause dilatation of various apertures, it would seem that this agent would greatly facilitate the catheterization of the tubes.

DR. SPRAGUE, in closing the discussion, said he had been agreeably disappointed at the way his paper had been received, for he expected it would be very severely criticized. It was the report of the very discussion to which Dr. Massey had referred that first led his thoughts in this direction.

DISCUSSION.

"WHAT ARE THE POSSIBILITIES OF ELECTRICITY IN THE TREATMENT OF FIBROID GROWTHS?"

The disputants were requested to confine their remarks to the special points presented in the following synopsis:

a. Symptomatic Cure. (Hemorrhage, pain, pressure symptoms, strength and nutrition.)

b. The Growth. (Arrest, retrogression, disappearance, recurrence.)

c. Kind of current.

d. Properties of the Current. (Electrolytic, cataphoric.)

e. Action of the Current: 1, nerve (vaso-motor, motor innervation, sensory); 2, muscle (irritability of, structural changes in.)

f. Contra-indications.

g. Change of method, current strength, polarity, length of séances, frequency of application and duration of treatment.

DR. J. H. KELLOGG read a paper on

WHAT ARE THE POSSIBILITIES OF ELECTRICITY IN THE TREATMENT OF FIBROID GROWTHS?

I began the treatment of fibroid growths by the electrolytic method something more than five years ago, and am still employing this method of treatment with confidence and satisfaction, although, as I am willing to confess, with more moderate expectations respecting the possibility of a radical cure of the disease. The Secretary has arranged this subject under convenient headings for discussion, and this synopsis, I believe, covers practically the whole ground. In opening the discussion I will touch briefly upon each point.

1. *What are the possibilities of electricity as regards a symptomatic cure?* One of the most prominent and serious symptoms connected with fibroid growths of the uterus is hemorrhage. Certainly, every physician who has had any considerable degree of experience must have been convinced of the value of electricity, especially the constant current employed after the method of Apostoli, in the control of the hemorrhage which usually accompanies fibroid growths. That electricity is capable of controlling this hemorrhage, I think is generally admitted among gynecologists, even those who do not consider the remedy of value in relation to other symptoms.

That local applications of electricity are of value as a means of relieving the pain which frequently accompanies the development of uterine fibromata, is also equally well attested. In my own experience I have found it a very valuable measure.

Symptoms, such as the interference with the functions of the bladder and other adjacent organs are relieved in cases in which the growth is diminished in size and perhaps, also to some extent in other cases.

The general strength and nutrition of the patient are as a rule, I think, from my experience and that of others who have had an extensive use of this remedy, improved in a very marked degree under the influence of the galvanic current. This improvement may be due in part to the suppression of the hemorrhage, but I think it is in many cases due to the influence of the galvanic current upon the abdominal sympathetic. The great sympathetic centers, located in the abdomen, have charge of the most important processes of nutrition. These are incidentally brought under the influence of the galvanic current in the treatment of fibroids, and it is, I believe, very largely through this means that the patient's nutrition, blood quality and general strength are improved.

2 *What are the effects of electricity in relation to the growth and development of uterine fibroids?*—That the electrical current will arrest the growth of fibroid tumors is a question which is still contested by many gynecologists, but the statistics which have been published by Keith, Apostoli, Massey, the writer and various other electro-therapeutists, it seems to me, must be accepted as evidence that fibroid growths, at least in certain cases, may be arrested by proper applications of the constant current. In my own experience, arrest of the growth has been secured in 75 per cent. of the cases treated, and in 55 per cent. there has been a diminution in the size of the tumor. In a few cases the tumor has entirely disappeared, but usually, even in the most favorable cases, some small evidence of the tumor remains behind. I think this will be the rule, except in cases in which the treatment is applied near the menopause and continued long enough to secure a decided retrograde change in the tumor, when the treatment may be so thoroughly successful that the growth may be made to disappear entirely. I have seen this occur in two patients who remained but a few months under treatment.

3. *What kind of current shall be employed?*—I think there is at the present time no question among electro-therapeutists as to what form of current has the most decided effect upon uterine fibroids. I am certain that no experienced electro-therapeutist would think of employing any other than the constant current for the purpose of antagonizing the growth of a uterine fibroid. The effects required are such as can not be obtained from the faradic or any other form of current than the galvanic.

4. *What properties of the constant current are useful in its application to the treatment of uterine fibroids?*—This portion of the subject is one which, perhaps, requires more elucidation. I have made no original experiments which will enable me to throw any new light upon this part of the question. My own belief is that the electrolytic action of the current, the action which occurs in the vicinity of the electrodes, is that which is of the greatest service in the treatment of the class of morbid conditions under consideration. This belief has led me to employ in connection with my treatment a coulombmeter by the reading of which I obtain directly the measure of the actual amount of electrolytic work done. In experiments which I have made upon living rabbits and thick portions of fresh beefsteak, I find that there is a definite relation between the amount of work indicated by the coulombmeter and the work done in the tissues; but it is necessary, also, to take into consideration the indications of the milliampèremeter. I do not wish to be understood as saying that the same amount of work will be done by one milliampère of current in ten minutes, as will be done by ten milliampères in one minute; but I am sure more uniform dosage may be obtained by the employment of the coulombmeter in connection with the milliampèremeter than by the use of the milliampèremeter alone. It is possible to obtain the number of coulombmeters by multiplying the number of milliampères by the time of the application; but the coulombmeter saves the trouble of this computation, giving the results by direct reading.

5. *What is the action of the constant current when applied to fibroid growths of the uterus?*—It is evident that not only the tissues of the uterus, but all the other organs intervening between the electrodes are brought under the influence of the electrical current. But it is doubtless through the influence of the current upon the nerves, muscles and vascular structures of the uterus and the morbid growths connected with it that the beneficial results observed are obtained. Through the influence of the current upon the vaso-motor nerves, the current produces contraction of the arterioles such as is seen when it is applied to the skin, and thus diminishes the blood supply of the tumor and cuts off to some degree its nutrition. The motor nerves of the uterus are powerfully stimulated by the current, and this must also exercise some favorable influence upon the growth. The anesthetic effect of the positive pole, well recognized in electrical applications to other parts of the body, is here of great service in the relief of pain. The effect of mild galvanic applications is to increase muscular irritability. This is one of its physiologic effects. The large current necessary for the most satisfactory results in the treatment of these growths may have the effect to set up degenerative changes in the morbid structures of the growths.

I am convinced, however, that the most important effect of the current is that upon the vascular structures of the uterus. I have frequently noticed after the application of the current, especially when I employed a large quantity, as from 200 to 300 milliampères, that slight evidences of inflammatory reaction have appeared, as evidenced by increased tenderness, slight swelling and other evidence of a circumscribed phlebitis. In two or three such instances the phlebitis has extended to the vessels of one leg. In one case, that of a woman having a very large fibroid reaching two or three inches above the umbilicus, in which I applied a very strong current, probably about 350 milliampères, the patient became very ill and was confined to her bed for several weeks. Both limbs were enormously swollen with phlebitis. The patient had a high fever for several days and I despaired of her life; but she made a good recovery and at the end of three months the tumor had decreased greatly in size and at the present time, five years since the treatment was applied, the patient is hard at work every day in a laundry. She has been able to engage in this laborious employment for the last four years. I believe that the amount of blood supply is diminished by the succession of inflammatory processes set up in the vicinity of the internal electrode by means of which the vessels are plugged up and that this is the principal means by which the constant current is of use in the treatment of fibroid tumors.

6. *Contra-indications for the employment of electrolysis for uterine fibroids.*—According to my experience, electrolysis is

not properly applicable to the treatment of uterine fibroids in the following cases:

a. Rapidly growing tumors not accompanied by hemorrhage. These tumors are either fibro-cystic or soft edematous myomata; and experience shows that neither class is amenable to treatment by electrolysis. Soft edematous tumors are not benefited even by the removal of the appendages. Hysterectomy is the only remedy in these cases.

b. Rapidly growing tumors which make their appearance after the menopause, or which take on rapid growth at this period, are not favorably impressed by any mode of applying the constant current with which I am familiar; although Dr. Massey has reported some success by means of abdominal puncture.

c. In cases in which an ovarian cyst exists as a complication of uterine fibroids, the use of electricity is inadvisable, as it is likely to increase the growth of the cyst; and as an operation must ultimately be performed for the removal of the cyst, it is better to remove the appendages completely with the cyst, or perform hysterectomy, than to depend upon the uncertain and possibly injurious results of an application of the constant current.

d. The constant current is also of doubtful value in cases in which the uterine fibroid is complicated by serious disease of the appendages. In these cases, applications even of a very mild character are often followed by inflammatory reaction, so that the current can not be tolerated in doses of sufficient strength to accomplish positive results.

e. It is also evidently useless to continue applications of the current in cases in which no good results are obtained after thorough trial for several months. Some cases will prove rebellious to this, as well as to all other non-surgical measures of treatment. Such cases require removal of the appendages or hysterectomy. I have secured excellent results in a considerable number of such cases by the removal of the appendages only. I prefer this method to hysterectomy in cases in which it is applicable, but have performed hysterectomy in a considerable number of cases with satisfactory results.

f. I mention, lastly, still another class of cases in which I consider surgical measures preferable to the use of the constant current; namely, cases in which the patient is unable for any reason to submit to the use of the constant current for a sufficient length of time to secure satisfactory results. The patient may reside at a distance and be unable on account of poverty to remain under treatment for six months or a year, the shortest length of time in which any very marked results can reasonably be expected. In such cases, and in various other circumstances, I think the patient should be allowed to decide whether the slow and less certain, but also less dangerous, method of electrolysis shall be employed or the more radical, though also somewhat more hazardous surgical method.

7. *Methods of employing electricity in the treatment of uterine fibroids.*—The strength, polarity, time, frequency, duration, and after care are questions of great practical importance for consideration in the discussion of this subject. Briefly, my own experience is this as regards the strength of the current. I am inclined to use a current of less quantity than when I first began the employment of the constant current in the treatment of uterine fibroids. Instead of using 250 to 300 milliampères, I now ordinarily employ 100 to 200. My usual rule is to make the current as strong as the patient can bear without too great discomfort. I endeavor to lessen the pain, and hence increase the current by employing with the constant the sinusoidal current with very rapid alternations. As previously stated, I use a coulombmeter in connection with the milliampèremeter as a measure of the work done. If I use a weak current I make the application for a longer time, applying as a rule from 80 to 100 coulombs of current, sometimes more. A weak current does not produce so strong an effect as a strong current, even although the number of coulombs may be made the same in each case by increasing the time for which the weak current is used. On this account, I use a larger number of coulombs when I employ a weak current, so as to approximate as nearly as possible the results obtained by a stronger current. The coulombmeter is not, like the milliampèremeter, a necessity, but is a very convenient instrument.

I almost invariably employ the positive pole for the internal electrode, on account of its hemostatic properties. One of the greatest drawbacks in these cases is the fact that at the beginning hemorrhage or menorrhagia is frequently excited, resulting in the discouragement of the patient and interference with the treatment. The positive pole may be slower in its action, but it is certainly less painful, and its use is more convenient than the use of the negative pole.

As regards the time of the application, I give little attention to the matter of time. As I have said, the amount of work done, as indicated by the coulombmeter, gives more useful information than any timepiece can give.

The frequency of the application must be regulated by the patient's toleration of the treatment. My usual practice is to make the application once or twice a week—rarely more than twice, and frequently but once.

The duration of the treatment is necessarily long. I have never been able to continue the treatment more than a year in any case. Dr. Apostoli reports success in cases after three years of treatment. I have seldom been able to continue treatment more than four to eight months, as my patients are almost all from a distance, so that I can not keep them under treatment for an indefinite length of time. I usually see decided indications of improvement after three to six months' treatment.

The after care in these cases is a matter which, in my opinion, receives too little attention. My usual custom is to give the application in the afternoon or evening and then send the patient to bed with instruction to remain twenty-four hours, or even forty-eight hours if there is any tendency to inflammatory reaction. Immediately after the application the patient receives a vaginal douche consisting of boiled water or a solution of bichlorid 1 to 10,000. The day following the application, two or three vaginal douches are administered. In case of painful symptoms, fomentations over the lower abdomen or a hot hip pack is applied. If there is a tendency to flowing, the alum vaginal pack, or packing the vagina with equal parts of alum and subcarbonate of bismuth is employed.

I tabulated a year or two ago the results of sixty-two cases. I found that 82 per cent. were very greatly benefited. Seventy-five per cent. of the entire number were symptomatically cured. In 55 per cent. the tumors were reduced; and in 14 per cent. the tumors disappeared entirely. In the cases in which the tumors disappeared, the growths were interstitial or submucous, and were in most cases small or moderate in size. A study of my cases led me to observe a marked difference in the results obtained in the different classes of fibroid tumors according as they were subperitoneal, submucous, or interstitial in character. In all the cases in which the tumors were greatly reduced in size or disappeared entirely, the growths were submucous or interstitial in character.

Another condition which favors good results in the treatment is the approach of the menopause. In my experience, the treatment unquestionably hastened the development of the menopause. My personal belief is that the constant current operates as a curative agent in these cases in precisely the same manner as does the menopause; namely, by causing shrinking of the blood vessels, thus cutting off the nutritive supply of the growth. The cicatricial tissue formed as the result of the repeated applications of the current closes up the small vessels, in this respect operating as does the retrograde change by which a withering of all the blood vessels of the uterus and appendages takes place at the menopause.

Dr. Felice La Torre. Privat-docent in Obstetrics at the University of Rome and member of the Society of Obstetrics and Gynecology of Paris, sent a contribution to the discussion which was read by the Secretary,

ON THE ACTION OF ELECTRICITY ON UTERINE FIBROMATA.

To establish in an exact manner, in the present state of our knowledge, the action of electricity on uterine fibromata, is in my opinion a problem whose solution is rather difficult; for we do not know yet in what the current consists, and what the electric phenomena are that it produces on the tissues. Nevertheless, since in these later times certain modifications in the tissues by means of the galvanic current (Apostoli's method) have been determined we may, however, by analogy, arrive at some hypotheses.

In reference to this, the American Electro-Therapeutic Association has done well to put on the program of their discussions, the action of electricity on uterine fibromata.

I am not just now in the best condition to take part in the debate, being absent from Rome; if I permit myself to do it by this paper it is to respond to the amiable and flattering invitation of our illustrious President to whom I tender my heartfelt thanks, and to submit to the Congress a new point of view in the study of the action of electricity on uterine fibromata.

The effects of electrical treatment of uterine fibromata

manifest themselves in two ways: 1, arrest of hemorrhage —an effect almost constant; 2, diminution in size of tumor —rare effect. How does this happen?

Every one knows that the action of the continued current is threefold, viz: polar, interpolar and extrapolar action. We understand each other as regards the signification of these terms; I shall not dwell on it. The extrapolar action has no direct influence on the fibromata; I do not take this into account here.

Let us now see what the principal modifications are from the polar and interpolar action on the tissues, and how they exert their influence in the arrest of hemorrhage and in the reduction of the fibroid tumor.

1. *Polar Action.*—One can say in general that the result of the polar action of the continued current, positive pole, according to the researches of Ciniselli, Klein, J. Parson, Villes, Apostoli, Piccinini, MacGinnis, La Torre, etc., is as follows:

a. A chemic caustic action with hard eschar.

b. An alteration (sclerotic at positive pole, imbibition at negative) a macroscopic and microscopic alteration of the tissues in general and of the vessels and blood in particular.

c. An energetic contraction of the uterine muscle.

2. *Interpolar Action.*—This exists, as shown by the experiments of Ciniselli, Dorsey, Shaw, Steavenson, Willis, Witte, Decio, etc. We have:

3. *Its Electrotonic Action.*—Exaggerated function—circulation and nutritive processes with increased activity.

4. *Its Cataphoric Action.*—Transmission of substances from the positive to the negative pole.

5. *Its Catalytic Action.*—Decomposition of complex bodies into their constituent elements.

We can from this conceive how the hemostatic effect of the galvanic current may be sought for in the polar action of the positive pole, and the reducing effect in the interpolar action aided by the polar action.

In what way does the polar action arrest hemorrhage?

In the beginning, it was thought that it was the galvano-caustic eschar which arrested the hemorrhage, but no one thinks it any longer; especially when the case is that of a large uterus where the cauterization is limited to a small surface. This is true in so far as arrest of hemorrhage has been obtained without introducing the electrode into the cavity of the uterus, by simply resting it against the cervix. I have had a few of these cases. It is evident that in these cases there is no question of intra-uterine chemico-cauterization and eschar.

On the contrary, it is much more probable that the arrest of hemorrhage is due to the contraction of the muscular elements. We know, in fact, that the continued current causes contraction of muscular fiber more easily than any other form of electrization, and that the unstriped fibers respond more promptly than the striped. In favor of these facts is the frequent expulsion of polypi from the uterine cavity after application of the continued current. Now the continued current causes the muscular fibers to contract energetically in every direction, thus compressing the vessels which penetrate the uterine walls transversely and in this way hindering an abundant afflux of blood to the organ whence the arrest of the flow.

In what way does the interpolar action reduce the fibroma?

This is a more difficult question, but I shall try to note the principal points. I shall not mention in this case all the opinions and all the theories advanced; I shall only touch upon the most plausible of these.

Milne Murray believes that the vessels of the capsule of the fibroma lose their function, whether by the interpolar action or by the polar contraction as well; the tumor consequently deprived of its nutrition must necessarily begin a regressive course.

Shaw, having observed that in some fibromata, subjected for a long time to electrical treatment, the weight diminished at the same time that the quantity of albuminous substances increased, believes that the current acts by producing direct electrolytic modification in the tissues of the tumor and still more in the liquids of the tumor.

Willis E. Ford believes also that it is in the liquids of the tumor, in the interpolar space, that the principal modifications take place; these are supposed to be chemic decompositions, resolution of complex bodies into others more simple, and to the elimination of products of these decompositions could be attributed probably, certain general disorders of the patients subjected to electrical treatment.

Ciniselli, on the other hand, finds it probable that the current produces a permanent modification on the nutrition of the tumors. This hypothesis is proved by the fact that there is found in the urine of patients treated by the galvanic current a greater quantity of sediments after the treatment than before, and an increase in the specific gravity.

These were the theories until quite recently, when Decio of Milan, in a remarkable work: "The Galvanic Current in the Cure of Uterine Fibro-Myomata" (*Annali di ost. e di gin. Milano*, 1893, No. 3 e 4), offered a new theory which seems to me quite plausible, studying from a new point of view the reducible power of fibromata. He believes one of the modifications to be a disturbance in the molecular interchange, due without doubt to electrolytic phenomena; that is, to certain special movements of molecular interchange among the elements. In what this consists is not yet well known, but an approximate idea is given by the theory of Grotthus, on liquids subjected to electrolytic interpolation. Now it is precisely in these disturbances in the molecular interchange of the elements of the tumor that Decio finds a new cause of atrophy of the fibromata. He has in fact found in the urine of women with uterine fibromata, submitted to electrical treatment (Apostoli's method) a constant peptonuria, and in direct proportion with the diminution in size of the fibromata. Decio finds this analogous to that which takes place in puerperal peptonuria. And in fact we find that the transformation of the albuminoid substance of the uterine muscle into peptone after labor is always *pari passu*, with the regressive process of involution of the uterus. It is, reasoning thus, precisely in a rapid absorption of this soluble product and in a successive elimination by the kidneys, that we find the cause of the reduction in size of the uterus the first days of the postpartum state. Besides this regressive movement of involution, Fischel attaches great importance to uterine contractions; these destroy by their rapid succession the cellular elements; it is these which by their compression of the nutritive vessels diminish the afflux of oxygenated protoplasm; it is these, finally, which hasten the metamorphosis of the proteid substances of the uterine parenchyma.

According to Fischel, it is especially to the slight uterine contractions during pregnancy that we may attribute the transient peptonuria of some pregnant women.

Now we have the same compression with the same effects in the fibromatous uteri submitted to the action of the galvanic current.

We have, then, the same causes and the same effects in the regressive changes of the puerperal uterus as in the myomatous uterus. Here we have a physiologic peptonuria. Decio says: "Here an artificial, electrical peptonuria." Decio has moreover observed that the electrical peptonuria was very manifest in cases of large tumors which had a great tendency to regressive metamorphosis; that the peptonuria was little or none where the regressive process of the tumor was doubtful, and that it was lacking altogether in the case of small uteri; a fact which he explains by the small quantity of elements causing either no peptonuria or very little. This fact has still another analogy, viz.: That the puerperal peptonuria is very insignificant or nothing at all in abortions or premature deliveries; this Truzzi explains by the moderate development of the uterine parenchyma and by the small contractile power at the moment of delivery.

Decio, then, having his views on the increase of soluble albuminous substances found by Shaw, considers that, as a result of special chemic modifications caused by the current (as Willis E. Ford has also shown by experiments on nutritive fluids), there can be a partial transformation of these juices into peptone, which, penetrating into the circulatory current—herein aided by uterine contractions—shows itself in the urine. Hence, evidently, the reduction of the fibroma.

This is a theory which I find very plausible.

Wishing to draw a conclusion, after what I have just said, we can say with much probability that electrical treatment acts on fibromata in two ways. We have:

1. The energetic contraction of the uterus under the positive polar action of the continued current, which, producing a compression of the organ, hinders an abundant afflux of blood and arrests the hemorrhage.

2. Special chemic modifications in the tissues, disturbance in the molecular interchange among the elements of the tumor under the interpolar action of electricity, causing a transformation of nutritive juices into peptones or into other sediments which are absorbed and eliminated by the kidneys, whence the atrophy and reduction of the fibromatous tumor.

(*To be continued.*)

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:
PER ANNUM, IN ADVANCE $5.00
SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any time and be sent to
THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 68 WABASH AVE., CHICAGO, ILLINOIS.
F. J. REBMAN, LONDON AGENT, 11 Adam Street, STRAND, LONDON.
W. H. LOWDERMILK & CO., WASHINGTON, AGENTS.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues and subscription for THE JOURNAL. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above subscription the weekly JOURNAL of the Association will be forwarded regularly.

All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1274, Philadelphia, Pa.

SATURDAY, APRIL 14, 1894.

"CHARTERED BY THE STATE."

One of the most interesting sections of the report on medical education by the Illinois State Board of Health is that concerning fraudulent medical institutions, some excerpts from which have already been given in the JOURNAL.[1] The history of these "diploma mills" furnishes a pretty conclusive argument for reform in the legislation which empowers any three or more individuals, who can "put up" between them the sum of three dollars with the Secretary of State, to flock together, start a "college" or "university" and confer degrees in medicine and issue diplomas with or without other consideration than that *ad pecuniam*.

The report furnishes the data of some fifty fraudulent diploma-selling concerns that have been started in the United States since 1833. Of this number twenty-nine have become extinct through agencies among which the Illinois Board itself has been one of the most effective, although the Board admits with some chagrin that it has been less successful in Illinois than in other States in breaking up these institutions "chartered by the State."

Its investigation and exposure in 1882, of a batch of four Boston concerns which were selling medical diplomas for $50 each, "C. O. D.," is a notable instance of the work of the Board in this direction. These concerns were organized and operated under Massachusetts legislation, similar to that of Illinois, for the incorporation of associations, universities, colleges and academies "for charitable, educational and other purposes;" and one of their most valued trade-marks was the legend, "Chartered by the State." As a result of the work of the Illinois Board and the publicity attendant thereon the Massachusetts Legislature passed an act, May 30, 1883, forbidding such incorporations from conferring medical degrees and issuing medical diplomas without special authorization from the General Assembly, and the sanction of the commonwealth has thus been withdrawn from the "diploma mills" of Massachusetts.

They still, however, continue to be chartered by the State of Illinois—as witness the "Malok brood," the Harkins' "universities" and other "colleges" and "institutes" started in Chicago during the last half-dozen years.

Early in the existence of the Illinois Board a protest was entered with the Secretary of State against the further issue of charters to this class of institutions and a demand was made for the revocation of those in existence upon proof of the fraudulent nature of the operations thereunder. The reply was, in substance, a request to be informed what the Board was going to do about it—that the law provided for the issue of the charter upon the payment of the fee, and if the Board did not like it, it had better get the law changed. Whereupon the Board asked the Legislature to except from the act concerning corporations the incorporation of medical colleges and institutions, even as corporations for banking purposes, the insurance business, the operation of railroads, real estate brokerage and the business of loaning money were excepted. But the law of 1872 still stands on the statute books and the Maloks and the Harkinses profit by it.

In the latter part of the last century the Supreme Court of Pennsylvania was empowered by the General Assembly of that State to issue certificates of incorporation to organizations for charitable, benevolent or educational purposes. But when, some forty years later, an application was made for a certificate of incorporation for a medical college, the Court refused to issue the certificate on the broad ground that the General Assembly could not have contemplated putting into the hands of a bench of lawyers the power to determine the qualifications of a faculty of teachers of medicine. And the wise and witty judge who delivered the opinion of the Court took occasion to point out that, to act upon the assumption that the General Assembly, in empowering the Court to issue certificates of incorporation, intended that any three men in any town of the State, however illiterate or irresponsible, might organize and demand of the Court a certificate—in effect, a charter—under which they might flood the State with medical diplomas, would be to place the degree of Doctor of Medicine in a situation similar to that which a celebrated Minister of France once threatened as to another kind of title—namely: That he would "create so many dukes that, while it would be no honor to be a duke, it would be no shame not to be a duke."

In the closing years of the nineteenth century a single State officer—not necessarily even a lawyer—

[1] JOURNAL AMERICAN MEDICAL ASSOCIATION, March 31, 1894.

is, apparently, accounted wiser by many State Legislatures than the entire Supreme Bench of Pennsylvania deemed itself fifty years ago.

STATE CARE OF THE INSANE IN NEW YORK.

On Oct. 1, 1893, the new system, known as "the State care" system, went into operation, by the assumption on the part of the State Commission in Lunacy, of the financial responsibility of caring for 8,700 insane poor. This number is about half the total poor insane in the State; there are 8,800 others supported in the asylums of New York and Kings Counties. An editorial paragraph in the New York *Tribune* sums up the present condition of these latter asylums in the following terms:

"The management of the New York asylums has always been excellent, and there is no pressing need of the transfer of the institutions to the State. In Kings County the institutions have been brought under political influence, and their management has been fraught with incompetence and scandal. The asylums at St. Johnland and Flatbush ought to be turned over to the State. The insane patients would receive more scientific treatment and more humane care; and a heavy financial burden now borne exclusively by Brooklyn taxpayers would be distributed among the counties."

These remarks indicate a true diagnosis and prognosis in respect of asylum management. There are already indications, on the part of certain "ring" politicians in Kings County, that the insane poor of that region will be passed over to the care of the State Commission, provided that the sums of money that have lately been expended on certain large asylum buildings in Suffolk County, can be repaid by the State. The insane poor would probably hail the change of custodians, if they could vote on the question, inasmuch as their dietary has been such that not a few of their number have been patient, under attacks of scurvy as well as under mental alienation.

A long letter from Albany, in the newspaper above named, states that the question of dietary of the insane is a foremost one, at the present time, with the State Commission. To this end, DR. AUSTIN FLINT has been invited to frame a "generous diet" for the State's 8,000 lunatics. The first recommendation of DR. FLINT was the almost unheard-of suggestion—in any State charity or "pauper" institution—to get good cooks for each and every asylum. DR. FLINT takes the position that good cooking subserves the physical welfare of the sick, not only, but also the pocket-book of the administration. "A good cook," says he, "is an important element in economical management." He then narrates some of his earlier experience in relation to the public institutions of New York City:

"In 1867 I was appointed by the Commissioners of Public Charities and Correction of the City of New York, to inspect the methods of cooking and serving food to the inmates, numbering then more than 10,000, of the institutions under their charge. After a careful inspection, as requested, I proposed certain changes in the dietaries, and at my suggestion an accomplished professional cook, at a liberal salary, was put in charge of the kitchens at Bellevue Hospital. As a result of this, not only did the cook save to the institution the sum of his salary, but the cost of maintenance of the patients per capita was materially reduced. At that time the number of patients in Bellevue Hospital was between 500 and 600. I suggest at the beginning that a thoroughly competent male cook be put in charge of the kitchens in all institutions with 500 or more inmates, and that he be required to personally supervise all the cooking, and not the cooking for the medical staff only. While it may be proper to provide for ordinary paupers and criminals little more than enough to keep them in fair physical condition, the insane poor, though a charge upon the State, should receive better consideration. Again, a most important part of the treatment of the insane relates to general nutrition, and many patients suffering from mental diseases require a great abundance of nutritious food, which contributes very largely to their cure, and thereby tends to relieve the State from their care and maintenance for a long period."

Writing in the line of this suggestion, DR. FLINT recommended the following quantities of supplies for 100 persons for thirty days:

Meat with bone, including salt meat, fresh and salted fish, and poultry (lb)	2,250
Flour (may be in part substituted by cornmeal and maccaroni) (lb)	3,000
Potatoes (lb)	1,500
Milk (quarts)	750
Eggs (dozen)	493
Sugar (lb)	429
Butter (lb)	429
Cheese (lb)	429
Rice (lb)	108
Hominy (lb)	108
Oatmeal (lb)	108
Coffee	215
Tea (lb)	25

The large purchases of food-stuffs to support a population of nearly 9,000 souls, will enable the Commission to obtain very low rates. The asylums, for example, will consume 6,000 barrels of flour and 250 tons of sugar in a year. The Commission aims to supply the same quality and relative quantity to the inmates of each hospital—whereas under the old system there were frequent departures from impartial treatment, at least, so it has been charged.

The Commissioners report that for the month of October they have effected an aggregate cutting down of the estimates of the trustees of the various asylums by $55,000, and for November $35,000. The inmates of the asylums will make all their own clothing. The inmates of New York's asylum on Blackwell's Island do so, and it is perfectly feasible in all the State hospitals. All farm work also ought to be done by the inmates of the hospitals. It will be good for the health of the patients to have them work out of doors. All the vegetables and farm products, hay and the like, thus can be raised by the inmates of the hospitals, and large sums saved. The inmates of the hospitals also ought to make the mattresses of these institutions, and by degrees these mattresses, made of hair, will be substituted for the old straw ones.

One of the novel features of the new *regimé* will be the discontinuance of the tobacco ration. On this subject DR. MACDONALD is reported as saying:

"It is highly unwise to give insane patients, who are a peculiarly nervous class of people, tobacco either to chew or to smoke. We found upon investigation that the supplying of tobacco to the inmates of the hospitals was costing the State the large sum of $15,000 annually. But that was not the worst of it; the health of the patients is seriously affected, and when smoking is permitted there is danger of fire. One hospital has had four fires in the last year, all, there is reason to think, the result of tobacco. Why, on Ward's Island there are 2,000 men patients who have not used tobacco in any form since 1877, and they are in excellent health. We

have, therefore, refused to allow any money in the hospital estimates for the use of tobacco."

A great saving has been made by cutting off a long dead-head "family" list, by reducing the equestrian stock, and by dismissing fancy help. One institution formerly governed by four florists, now must get along with one only. The amount of the current appropriation for the State insane is $1,300,000, all of which must be strictly accounted for by the three Commissioners, at the head of whom is Dr. Carlos F. MacDonald. The hospital trustees are not permitted to spend a dollar without estimate and consent, and all expenditures must be submitted monthly for audit.

The unfortunate lunatics will, under the new *regimé*, have a more generous diet—minus the nicotine element—with a greater amount of that occupational exercise that is salutary to the mind diseased. The work in which the State Commission is engaged is one worthy the best minds of the State, and we would feel more hopeful of good results if another medical man had a place on the Commission.

MEDICAL EXAMINING AND LICENSING BOARDS.

The next annual meeting of the National Conference of State Medical Examining and Licensing Boards will be held in the city of San Francisco, June 5, 1894, during the session of the American Medical Association. Dr. Charles K. Cole, of Helena, Mont., the Secretary of the Conference, has issued a circular calling for reports on the various subjects with which these Boards are concerned, and proposes to tabulate and present to the Conference the information received in continuation of the work in this connection previously done by the late Dr. Rauch, the founder of the Conference and its President at the time of his death.

Each Board is asked to report the period of its existence; the number of candidates examined during such period, by years, and the number passed and furnished license to practice; its organization with reference to schools of practice; its judgment upon the advantages and disadvantages of mixed Boards and of separate Boards for each school of practice—regular, "homeopathic," "eclectic;" its judgment as to the number of members which should constitute a Board and the proper appointing power; "should teachers in medical schools be eligible to membership on State Examining Boards?" Should certificates be interchanged between State Boards? The leading defects in the laws concerning such Boards; the requirements as to period of study and curriculum which should entitle colleges to recognition as in "good standing" for purposes of registration; the litigation had by the Board and its results; the number of practitioners in the State, by schools of practice, in the Army, Navy and Marine-Hospital Services, and those practicing illegally; all legislation concerning medical practice within the jurisdiction of the Board.

This list of subjects embraces many of direct interest to every member of the profession, and the session of the Conference is likely to attract attention.

VITAL STATISTICS IN NORTH CAROLINA.

Dr. R. H. Lewis, of Raleigh, Secretary of his State Board of Health, is earnestly engaged in promoting an improved system of vital registration in North Carolina. The last *Bulletin* contains his statement regarding the chief obstacles in the way of the proper collection of statistics in the rural and urban populations under his charge. We quote a portion of his article:

"One of the most important functions of a sanitary bureau is the collection of vital statistics. Section six of our law says: 'Monthly returns of vital statistics, upon a plan to be made by the State Board of Health, or their Secretary acting under their instructions, shall be made by the County Superintendent to the Secretary of the State Board.' The plan devised by the late Secretary, the lamented Dr. Wood, and still in vogue as the best available, is not calculated to secure complete and accurate statistics, but merely a general idea of the prevalence of particular diseases, especially those of a communicable character, in the counties, and the number and causes of death in the cities and towns. Indeed, the conditions with us are such—an extremely conservative and rather sparsely settled rural population in the main—that obtaining reliable statistics from the State at large is simply out of the question at present and we fear will be for many years to come. And yet it is of peculiar importance to our State, inasmuch as immigration is greatly desired, that we should have accurate and reliable statistics, especially in mortuary matters.

"Even in cities and towns it is not possible to obtain full and reliable mortuary statistics except under a strict enforcement of ordinances imposing a decided penalty for the burial or removal from the corporate limits, of a dead body except upon a burial permit issued by a designated official, based upon a death certificate, giving, chief among other things, the cause of death signed by the attending physician, or cases where there was no attending physician, by the nearest friend, and sworn to by him before a magistrate. The authorities should impress this ordinance particularly upon the undertakers in such a manner as to effectually prevent their undertaking the preparations for burial until the burial permit is produced. Something less than a year ago we sent to every town in the State having five hundred or more inhabitants, and to all county-seats of less population, a model ordinance with sample blanks, in which the regulations suggested above were set forth, in the hope that it might be generally adopted and mortuary statistics collected in every place on the same plan. While only two towns have formally adopted the ordinance as a whole, a number have it essentially, and the statistics sent in we believe to be generally reliable. But we can not help feeling when we note a death rate very much smaller in one town than in another of about the same sanitary conditions, that the former either has an imperfect ordinance or does not enforce a good one. We are not willing to admit, that any municipality would deliberately 'fudge,' as we used to say in marbles, on its sisters.

"We have brought forward this subject because of its importance and in the hope that those of our readers living in cities and towns will interest themselves in the matter sufficiently to inquire as to the ordinance on the subject and as to the enforcement of the same. The display of such an interest on the part of the medical men of any city or town would surely have its effect upon the authorities and make for the perfecting of the returns."

Whatever of influence this Journal may have with the medical men of the "old North State" is unhesitatingly thrown in favor of the difficult but necessary task that has been assumed by Dr. Lewis. We trust he will be heartily supported.

WHAT ARE PRIVILEGED COMMUNICATIONS?

At common law, confidential communications made by a patient to a physician are not privileged. By statute they are, however, rendered otherwise in most of the States. In Indiana, for example, physicians are prohibited from testifying as to matter communicated to them, as such, by patients, in the course of their professional business, or advice given in such cases. With this for a basis, the Supreme Court of Indiana has, in the case of SPRINGER v. BYRAM, decided Feb. 15, 1894, examined quite a number of authorities and summarized the law as follows: The privilege may attach, notwithstanding the presence of third persons in the sick-room, where the consultation is had. If the attending physician calls in another physician for consultation, the communications made to the latter are privileged. Where there are two physicians, the patient does not, by calling one of his physicians as a witness, waive his privilege to object to the testimony of the other. Communications made by a patient to his physician, for the purpose of professional aid and advice, are privileged, because intended to be private and confidential, and can never be divulged without the consent of the patient; it being the privilege of the patient, and not of the physician. The privilege of exemption from testifying to declarations made and facts actually known is extended to a physician who derives his knowledge from the communications of a patient who applies and makes disclosures to him in his professional character. The immunity extends to all such facts, whether learned directly from the patient, or acquired by the physician through his own observation or examination. Neither can disclosures be made by other persons whose intervention is strictly necessary to enable the parties to communicate with each other. But if parties sustaining confidential relations to each other hold their conversation in the presence and hearing of third persons, whether they be necessarily present as officers, or indifferent bystanders, such third persons are not prohibited from testifying as to what they heard. Thus, the court holds, in this case, that persons in charge of an ambulance sent by a stranger to take an injured party home after an accident, are not forbidden to testify as to what such party then said to a physician as to the cause of the accident.

CORRESPONDENCE.

Proposed Revision of the Code of Ethics of the American Medical Association—Report of the Committee on Revision.

To the Editor:—After more than ten months of the year have passed since the last annual meeting of the AMERICAN MEDICAL ASSOCIATION, the majority of the Committee appointed nearly two years since to inquire whether any revision of the Code of Medical Ethics was desirable, have made their report in the JOURNAL OF THE ASSOCIATION of the 7th inst. As less than half of the State and Territorial medical societies will have regular meetings between this time and the meeting of the ASSOCIATION in San Francisco, it is apparent that no proper consideration can be given to this report by the several State medical societies for the purpose of instructing their delegates regarding it, as was contemplated by action taken at the annual meeting in Milwaukee. And but few readers of the JOURNAL will fully comprehend the changes contained in the revised Code and their real import, unless they read it in direct comparison with the present Code, item by item. For the majority of the Committee, instead of pointing out such sections or parts of the Code as they deemed wrong or defective, and presenting such substitutes as they believed necessary, as such committees usually do, have simply re-written the whole Code, preserving so much of the language of the present Code as to make the casual reader think that no very important or radical changes had been made in the revised document.

A closer examination, however, will show that by silently omitting several whole sections relating to some topics; dropping a word here and a line there from other sections, and introducing new sections ostensibly for better covering the so-called progressive changes in the profession itself the Committee have placed their revised Code on a radically different basis, and have so constructed some of its details as to violate the plainest principles of equality and justice. The character of the revised Code plainly shows that its authors have had for their chief objects: 1, the elimination from the Code of every item that tended to make a distinction between regular and irregular practice, between modern scientific medical education and the metaphysical dogmas of past centuries; 2, the careful introduction and recognition of class distinctions in the profession; and 3, the actual substitution of the license from some board or tribunal *legally* authorized to grant it, in the place of a *regular* medical education, as the test of recognition, both in consultation and professional fellowship.

In the work of *elimination*, the majority of the Committee have entirely omitted the sections relating to the "obligations of patients to their physicians" and of the "public to the profession;" and also of Sections 2 and 3 under the head of "Duties for the Support of Professional Character." By these omissions they have destroyed the completeness of the Code, for it is just as important for the physician to know what are the just obligations of his patients to him, as it is to know his obligations to his patients.

And if it is important that the members of the profession should be taught their obligations to the public, they should be equally informed of the just obligations of the public to them. It is no just excuse for these omissions to say that the Code was not intended for the perusal of patients or the public, for it was really intended for both; and if physicians were more diligent in placing copies of the Code in the hands of their more intelligent patrons it would greatly benefit all parties. By omitting from the Article on "Duties for the Support of Professional Character," Section 3, they have erased from the Code the only rule directly enjoining a high standard of moral excellence and purity of character on the part of the physician; a rule which in substance, first appeared in the celebrated oath of Hippocrates and has been retained in every code of ethics since. If, as is said in the "Proem" or Introduction to the revised Code, "Ethics is that science which treats of human actions and mental affections considered as virtuous or vicious, right or wrong," why omit from a code of ethics all precepts relating to the maintenance of a noble, vir-

tuous and temperate life as essential to a truly successful professional career?

Under the same heading, "Duties for the Support of Professional Character," the revised Code reproduces as Section 2, Section 4, of the present Code in full as follows: "It is derogatory to the dignity of the profession to resort to public advertisements or private cards or handbills inviting the attention of individuals affected with particular diseases—publicly offering advice and medicine to the poor gratis, or promising cures; or to publish cases and operations in daily prints, or suffer such publications to be made; to invite laymen to be present at operations, to boast of cures and remedies, to adduce certificates of skill and success, or to perform any other similar acts. These are the ordinary practices of empirics, and are highly reprehensible in physicians." But to this well-recognized section the revising Committee make the following remarkable addition: "It shall not be considered as a violation of the spirit of this section, however, for physicians engaged in the work of medical education, either singly or associated in colleges, or for physicians practicing in hospitals, whether private or public, general or special, to announce the fact or allow it to be announced to the profession in the advertising pages of strictly medical journals, or for physicians devoting special attention to one of the recognized special departments of medical practice to *note* the fact on their *signs* or *private cards*." Read in plain direct language, this means that every physician who claims to give "*special attention*" to some particular class of diseases may "invite the attention" of those affected by such diseases by advertising the same on his door plate, sign board, and private cards as much as he pleases, while the first half of the section makes the doing of the same thing by the general practitioner not only "derogatory to the *dignity* of the profession," but "highly reprehensible." Will the members of the Committee of Revision inform us on which of the "eternal principles of justice" alluded to in their "Proem" this distinction is founded? The next section, which relates to the holding of *patents* is so far emasculated as to make it prohibit only the holding of patents for *secret nostrums*.

By omitting all mention of surgical instruments and appliances, and also of the prescribing of secret nostrums, the inference necessarily follows that if this Revised Code should be adopted it would be no longer "derogatory to professional character" to hold patents for all kinds of instruments and appliances used in medical and surgical practice, and to prescribe secret nostrums and trade-mark medicines, *ad libitum*. Surely this would be progress, but in what direction—that of science and honor, or that of mammon and dishonor?

It was doubtless the same train of thought leading to the proposed changes in the two sections last noticed, that prompted the Committee to introduce into the Revised Code a new chapter on "Special Departments in Medical Practice," with three Articles: 1, on the Necessity for Specialties; 2, on the Education of Specialists; and 3, on Specialists as Consultants.

Under the first head, the necessity for specialists is made to rest on the broad assertion that "the field of medical knowledge is now so vast that no one mind can compass it in all its details. Nor can any one hand attain the dexterity essential for the successful performance of all the delicate and daring operations of modern surgery." And it is added that, "*differentiation* in study and labor of whatever kind is the test of civilization." Yet in the very next Article, on the education of the specialist, it is stated that they must not "omit one jot or one tittle, either of the preliminary or the technical education insisted upon as essential for the physician," and consequently "specialists should not be something less than general practitioners, but general practitioners and *something more*." In other words, the present field of medical knowledge is so vast that no one mind can compass it, and therefore differentiation in study and labor, the very test of civilization, necessitates division into specialties; nevertheless, the specialists must not differentiate or abate one jot or one tittle, but barbarously struggle to cover the whole field, that they may be "general practitioners and something more." That is something more than the whole. What kind of philosophy or logic is this?

In the third Article of this remarkable chapter it is declared to be "the obvious duty of general practitioners, when cases come under their care for the successful management of which they have not had the requisite training, or do not possess the necessary facilities and appliances, to recommend and introduce such cases to a competent and reputable specialist, and thus prevent them from drifting into the hands of charlatans." Now is it not equally the "obvious duty" of the specialists, when cases come to them not embraced in their specialty, to recommend and introduce such cases to a reputable general practitioner, and if so, why not incorporate it in the Code? Why put the ethical injunctions all on one side? Is there not the same danger that the unfortunate patients might drift into the hands of charlatans in the one case as in the other? Perhaps, however, the members of the Committee regarded every case safe that reached the hands of a specialist, inasmuch as they had declared him to be both "general practitioner" and specialist or "something more." If it is really desirable to introduce into the Code any mention of particular grades or classes of practitioners, instead of this illogical chapter, the Committee on revision might have properly incorporated the substance of the resolutions adopted by the Association in 1869, which simply declare that specialties are "recognized as proper and legitimate fields of labor," and that "specialists shall be governed by the same rules of ethics and professional etiquette as have been laid down for general practitioners." This would have kept the Code in harmony with, instead of in violation of, that "eternal principle of justice" which accords to every member of a profession equal rights and privileges.

But the climax of degradation is reached in this Revised Code in its Chapter II, Article II, Of Consultations, Section 2, where it is declared that, "a thorough education, preliminary, scientific and technical, furnishes the only presumptive evidence of professional abilities and acquirements, and ought to be the only acknowledged right of an individual to the exercise and honors of his profession. Nevertheless, as in consultations the good of the patient is the sole object in view, and as this is often dependent on personal confidence, no intelligent practitioner, who has a *license* to practice from some medical board of known and acknowledged *legal authority*, and who is in good moral and professional standing in the place where he resides, should be refused consultation, when it is requested by the patient." Here, after the usual flourish about "a thorough education," etc., we have a complete abandonment of the authority of the profession to decide what shall be the character and qualifications of those who are to be recognized in consultations and fellowship, and its transference to *any medical board* of known "*legal authority*," to grant a license to practice.

This is done by simply omitting from the corresponding section in the present Code the word "*regular*" at its beginning, and from between the words, "intelligent," and "practitioner" further on; and the omission of the words, "recognized by the Association," directly following the words, "acknowledged legal authority." Also the omission of all of the last paragraph of the section as it is in the present Code. By these omissions they have removed from this Revised Code, every vestige of authority for the profession to

decide what shall be the education and qualification of those who are to be admitted to its own fellowship and consultation, and have given that authority directly to an indefinite number of medical schools and medical boards of every *ic* and *ism*, regular, homeopathic, eclectic, physiopathic, etc., all possessing "acknowledged *legal authority*" to grant degrees or licenses. Consequently no one holding a license from any of these sources should be refused consultation and fellowship by the members of a great and beneficent profession. Yet it is well known that there is scarcely a medical impostor or charlatan in the country who does not hold a license or diploma from some one of these schools or boards having legal authority to grant the same.

It seems to me the learned and highly esteemed members of the profession who constitute the majority of the Committee on Revision of the Code, in their anxiety to free the Code from all allusions to regular or irregular practice, to genuine or bogus systems of medical education, and to ethically recognize special privileges for specialists, have so far obscured their own mental vision with an almost tiresome protestation in favor of "education, preliminary, scientific and technical," that they have not clearly seen the abyss of incongruities into which they have drifted. If the time ever comes when each State shall have only one board of medical examiners, before which all candidates for admission into the profession shall be examined on all branches alike, and with substantial uniformity in their standards, it will then be easy to adjust the details of the Code to the *legal requirements*. But until that time does come it is hoped that the great body of the medical profession in this country will adhere to the present Code, which has met with the unqualified approval of the profession of all other enlightened countries. And even then let those who are on the stage of action be careful to make the changed conditions or relations of the profession conform ethically to the "eternal principles of justice," instead of trying to make the "eternal principles of justice" conform to the professional requirements.

Yours truly, N. S. DAVIS.

Chicago, Ill., April 9, 1894.

In Favor of the Old Code.

To the Editor:—If there were any argument required to prove that the Code as it now stands is a masterpiece in dignified statement of what constitutes professional conduct, that argument in most convincing power would be furnished by placing the alleged "old," "obsolete," Code side by side with the productions of the would-be revisers of it.

The Code has been sneered at as a meaningless wordy-make-up hundreds of times, and yet somehow, notwithstanding that it is meaningless, just as soon as a man does an unprofessional thing the old Code tells him of it. The Code appeals to the highest principles in man. Anything which antagonizes the Code is something which is of a lower order than the highest principles in man. Mr. Editor, there are a great many men in the world who enjoy being members of an honorable profession, and who never do anything toward maintaining the honor of the profession. These men are anxious to share in the profits, financial profits too, which such an organization carries with it, and if you have never done so before, turn to the proposed revision as published in the last JOURNAL, and see how "carefully" the old Code has been "studied," along lines which affect consultation fees.

It will be vastly more to the honor of the profession to throw the Code overboard and openly indorse tomfoolery and quackery, than to do the humiliating thing of subscribing to a silly apology for doing for money what everybody knows to be a disgraceful thing.

J. L. TRACY, M.D.

Professor John Tyndall.

MT. CARMEL, ILL., April, 1894.

To the Editor:—Your notice, on page 523 of the JOURNAL of April 7, of Prof. John Tyndall's donation to Harvard, does very meager justice to his noble acts. He came to this country in October, 1872, and delivered lectures in Boston, Philadelphia, Baltimore, Washington, New York, Brooklyn and New Haven—thirty-six in all; the total receipts for which were $23,100. After deducting his actual expenses there was left $13,033. This he placed in the care of a board of trustees, consisting of Prof. Joseph Henry, Dr. E. L. Youmans and Gen. Hector Tyndale, with a request that the interest on the same be used to send two especially promising American pupils to one of the European universities. The trustees found considerable difficulty in carrying out the instructions, and did not use all the interest as it accrued. At the end of thirteen years the fund had increased to $32,400. Prof. Tyndall then decided to divide this into three equal parts; and gave one part to Columbia College, one to Harvard University, and one to the University of Pennsylvania, to be used in the establishment of three permanent fellowships in physical science.

J. SCHNECK, M.D.

Is After Medicus.

SEATTLE, WASHINGTON, April 4, 1894.

To the Editor:—Every reader of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, and especially every member of the ASSOCIATION who ranks himself a gentleman, will indorse the remarks of Dr. S. Solis-Cohen and treat "Medicus" with contempt. Very truly, EMIL BORIES, M.D.

ASSOCIATION NEWS.

The Association Train will leave Chicago Monday, May 28, via Santa Fe R. R., Rio Grande Western, and Southern Pacific, for San Francisco via Denver, Colorado Springs, Leadville, Manitou, Glenwood Springs, Salt Lake, Ogden, Truckee and Sacramento. Returning, after the meeting, the train will pass through Sacramento and Northern California to Portland, thence east by way of the Northern Pacific R. R. to St. Paul. C. M. & St.P. R. St. Paul to Chicago. A stop over at Yellowstone National Park for those who desire it has been arranged, and it has been understood that at several places on the journey there will be short stops. President Hibberd's party in a special car join the train at Chicago, and the St. Louis party are expected to join at Kansas City. From all points east and south, concentrating on this train should be effected at Chicago and St. Louis. For all information relating to this train, fares, etc., address J. M. Connell, 212 Clark st., Chicago, or any agent of Santa Fe line in other cities. Rates promised are the lowest excursion rates at time of departure.

This is the only route on which arrangements have been perfected by the Trustees.

SOCIETY NEWS.

The North Philadelphia Medical Society was organized April 2, Dr. William G. Howell was elected President, and Dr. J. B. Brackbank Secretary.

The Chicago Medical Society.—The Publication Committee, on behalf of the *Chicago Medical Recorder*, will give two prizes of $100 each for the best papers submitted before the Chicago Medical Society during the year 1894–5. The editor, Dr. Church, must be notified of each paper entering the contest at the time it is read before the Society. It is intended to increase the amount and number of these prizes

as the profits from the *Recorder* may justify, and all members of the Society are urged to continue their cordial support of the journal and, other things being equal, to give our advertisers the preference when prescribing. It is also suggested that whenever a worthy article for physicians' use is presented by agents, the advice be given to advertise in the *Recorder*. The *Medical Recorder* is now self-sustaining, and will require no further financial aid from the Society, but in the way suggested much can be done toward increasing the fund for prizes, which will secure original and valuable work and add greatly to the importance of the Society.

(Signed) E. J. Doering,
John A. Robison,
Archibald Church.
Committee on Publication.

April 2, 1894.

Association of American Anatomists.—The sixth annual meeting of this Association will be held in connection with the Congress of American Physicians and Surgeons, May 29 to June 1, 1894, in the city of Washington, D. C. This will be the first meeting since that of December 27 to 29, 1892, at Princeton, N. J. The sessions will be held in the Preparatory Department of the Columbian University, H Street, between Thirteenth and Fourteenth, within a few steps of three lines of street cars, and only a few blocks from the principal hotels and Government Departments.

Members who expect to attend will please notify the Secretary and forward to him the titles of papers, etc., which they expect to contribute. The final program will be issued about May 1.

Thus far the following titles have been received:

Dr. Harrison Allen, University of Pennsylvania, "Morphology as a Factor in the Study of Disease." This paper will be read at the general meeting of the Congress on the afternoon of May 29. The discussion will be led by Dr. Thomas Dwight, of Harvard, Dr. Fred H. Gerrish, of Bowdoin, Dr. Frank Baker, of the University of Georgetown, and Dr. Burt G. Wilder, of Cornell.

Also by Dr. Allen two papers: "The Study of the Human Cranium," and "On the Shortening of the Face-axis in the Evolution of the Mammalia."

Dr. Carl Heitzmann, of New York City, "Identity of Structure of Protoplasm with that of Striped Muscle."

Dr. B. G. Wilder, of Cornell, "Relation of the Olfactory to the Cerebral Portion of the Brain." Also "Notes on the Anatomy of the Orang."

Dr. D. K. Shute, of Columbian University, Washington, "Perineum and Perineal Body."

Dr. Wm. P. Carr, of Columbian University, Washington, "Theoretical Anatomy of the Sympathetic System."

Papers are also promised by Dr. Thomas Dwight, of Harvard; Dr. Frank Baker, of Georgetown University, and Dr. D. S. Lamb, of the Army Medical Museum. The titles have not yet been reported.

It is requested that nominations and recommendations for membership be sent to the Secretary before the time of meeting. D. S. Lamb, M.D., Secretary and Treasurer,
800 10th Street, Washington.

March 31, 1894.

Texas State Medical Society.—The twenty-sixth annual meeting of the Texas State Medical Society will be held in the Senate Chamber, Capitol Building, Austin, Texas, April 24, 25, 26 and 27, 1894. The following papers are announced:

Bacteriologic Aspects of Croupous Pneumonia. H. A. West, M.D., Galveston.

The Therapeutic Uses of Spartein. David Cerna, M.D., Galveston.

Hydrotherapy. D. R. Wallace, M.D., Waco.

The Relation of Pharmacy to Medicine. James Kennedy, M.D., Galveston.

Introducing the Subjects of Dosimetry and Subcutaneous Medication. D. R. Wallace, M.D., Waco.

The Present Status of Symphyseotomy, and its Relation to other Obstetrical Operations. J. F. Y. Paine, M.D., Galveston.

Report of a Monstrosity without Limbs or Sexual Organs. Matthew M. Smith, B.Sc., M.A., M.D., Austin.

Tuberculosis of the Joints; its Etiology and Treatment. Wm. M. Cunningham, M.D., of Bastrop. Discussed by Drs. W. F. Starley of Tyler, and I. E. Clark of Schulenberg.

Diseased Joints in Children. Samuel E. Milliken, M.D., New York.

The Treatment of Neglected Cases of Hip Joint Disease. J. E. Thompson, M.D., Galveston.

Removal of Female Breast and Axillary Glands for Malignant Disease. B. F. Britain, M.D., of Arlington.

A Report of Six Cases of Depressed Fracture of Frontal Region of Skull, with Two Deaths. J. S. Price, M.D., of Beaumont. Discussed by Drs. A. F. Sampson, Galveston, and Matthew M. Smith, Austin.

Brain Surgery of To-Day. Matthew M. Smith, M.D., Austin.

Concussion and Contusion of the Brain. T. F. Wynn, M.D., Pittsburg.

A Contribution to the Study of the Action of Chloroform. Drs. Edward Randall and David Cerna, Galveston.

Chloroform Anesthesia. Q. C. Smith, M.D., Austin. Discussed by Drs. H. K. Leake, Dallas, and H. C. Nott, Goliad.

Irrigation and Drainage for Peritonitis. Joseph Price, M.D., Philadelphia, Pa. Discussed by Drs. B. E. Hadra, San Antonio, and C. A. Smith, Tyler.

The Modern Treatment of Wounds. Russell A. Hibbs, M.D., New York City. Discussed by Drs. T. J. Bennett, Austin, and George W. Christian, Houston.

Report of a Case of Injury to the Chest. August Schenk, M.D., Kennedy.

Appendicitis; also Report of a Case of Congenital Displaced Enlarged Liver, Mistaken for Tumor; Operation. J. E. Gilcrest, M.D., Gainesville. Discussed by Drs. B. E. Hadra, San Antonio, and A. Sims, Weatherford.

The Operative and Mechanical Treatment of Club-Foot, with Report of Cases. T. W. Shearer, M.D., Wallisville.

A Case of Incomplete Dislocation of the Head of Tibia Inwards, with Complete Outward Vertical Luxation of the Patella. William J. Bever, M.D., Creek.

On Perineorrhaphy by Duke's Method. Thos. More Madden, M.D., Honorary Member, Dublin, Ireland.

Abscess of Spleen in Child Three Months Old; Recovery. W. A. Watkins, M.D., Kemp. Discussed by Drs. Q. C. Smith, Austin, and J. D. Burch, Aurora.

The Fitness of the Climate of Texas for Operative Surgery, Demonstrated by Results in Recent Capital Cases. By Drs. Beall, Walker and Capps, Fort Worth.

Increase of Mental Unsoundness. D. R. Wallace, M.D., LL.D., Waco.

Morphin Suicides. Prevention. Treatment of Opium Poisoning. E. D. Capps, M.D., Fort Worth.

Mind Cure. D. R. Wallace, M.D., LL.D., Waco.

Dysmenorrhea, with Sterility, and its Treatment. Sam Cunningham, M.D., Elgin. Discussed by Drs. Hibbs, of New York, and G. B. Foscue, of Waco.

An Original Method of Disposing of the Ligatures after Laparotomies in the Pelvic Region, Effecting Perfect Vaginal Drainage, with Report of Cases. James Cummings, M.D., Austin. Discussed by Drs. W. J. Mathews, of Austin, and H. H. Thorpe, of Liberty Hill.

Intra-Uterine Manipulations in Pelvic Inflammation. J. F. Y. Paine, M.D., Galveston.

Placenta Previa Treated by Cesarean Section. G. A. Moses, M.D., St. Louis, Mo. Discussed by Drs. T. D. Wooten and G. A. Cupples.

The After Treatment of Celiotomies. G. D. Parker, M.D., Houston. Discussed by Drs. A. C. Scott, of Temple, and Q. C. Smith, of Austin.

Some Clinical Observations on Hematozoa Malariæ. Wm. Gammon, M.D., Galveston.

Embarrassments of Medicine. James H. Bell, M.D., Philadelphia, Pa.

H. A. West, M.D., Secretary, Galveston.

Wisconsin State Medical Society.—The forty-eighth annual meeting of the Wisconsin State Medical Society will be held at the Plankinton House, Milwaukee, May 2, 3 and 4, 1894. The sessions will be held in the Casino Hall of the Plankinton House, beginning at 11 o'clock on Wednesday forenoon, May 2. The reading of papers and discussions will be continued Wednesday afternoon and evening, as well as during the entire day of Thursday.

The literary exercises will be resumed at 8:30 o'clock Friday morning, and the annual election of officers has been set down for 10 o'clock. At 11:45 A.M. business will be sus-

pended for a recess of fifteen minutes, when, at 12:00 M., the President of the Society will deliver the Annual Address.

The Anniversary Dinner will be served at the Plankinton House at 1:00 P.M. The members of the Society will meet in the Club Room and be called in seniority of graduation, and, preceded by the invited guests, will march in procession to the banquet hall. Tickets to the dinner, for which there is no extra charge, should be procured of the Treasurer, Dr. S. S. Hall, as early as possible—preferably when registering at the beginning of the meeting—that the Committee on Arrangements may know the number to provide for. The Committee announces that no person will be admitted to the dinner without a ticket. It is expected that the Anniversary Banquet will be one of the very pleasantest features of the session, as it surely was last year, and every member is urgently requested to be present.

The following is a partial list of papers which will be presented at the meeting:

Annual Address by the President, Dr. B. C. Brett, Green Bay.
Address in Surgery, Dr. H. Reineking.
Knee Joint Disease, Dr. Wm. Mackie, Dr. H. M. Brown.
Injuries of the Cranium and Contents: Diagnosis, Dr. B. G. Gudden; Treatment, Dr. W. H. Earles; Medico-Legal Aspects, Dr. J. A. Jackson.
Hernia—Anatomical Considerations, Dr. F. W. Epley.
Treatment of Reducible Hernia, Dr. B. T. Phillips.
Treatment of Strangulated Hernia and Radical Cure of Same, Dr. A. H. Levings.
Splints, Dr. G. D. Ladd.
Varicose Veins and Their Treatment, Dr. J. R. Minahan.
Local Treatment of Acute Follicular Tonsillitis, Dr. A. B. Farnham.
Internal Treatment of Acute Follicular Tonsillitis, Dr. W. H. Neilson.
Removal of the Tonsils, Dr. Joseph Szoldrski.
Etiology, Pathology and Symptomatology of Tonsillar Hypertrophy, Dr. F. C. Rogers.
Tumors of the Tonsils, Dr. O. M. Waterman.
Discussion by Dr. J. S. Walbridge, Dr. F. C. Rogers, Dr. A. B. Farnham, Dr. H. V. Würdemann, Dr. B. Bantly.
The Pathology of Granular Conjunctivitis, Dr. H. V. Würdemann.
The Medical Treatment of Granular Conjunctivitis, Dr. C. Zimmermann.
The Surgical Treatment of Granular Conjunctivitis, Dr. J. A. Bach.
The Complications of Granular Conjunctivitis and their Treatment, Dr. E. H. Neymann.
Acromegalia, Dr. E. L. Bullard.
Pyrexia, Dr. W. H. Washburn.
Antipyretics and Their Modus Operandi, Dr. T. H. Hay.
The Present Status of the Treatment of Acute Febrile Diseases by means of Antipyretic Drugs, Dr. H. B. Sears.
Hyperpyrexia and its Management, Dr. G. M. Steele.
The Ephemeral Pyrexiæ of Childhood, Dr. H. B. Tanner.
The Pathology of Uremia, Dr. B. J. Bill.
The Clinical Aspects of Uremia, Dr. E. H. Townsend.
The Therapeutics of Uremia, Dr. C. H. Lemon.
The Principles and Ruts of the Practice of Medicine, Dr. J. R. Currens.
Waiting, Dr. S. W. French.
The Country Doctor in Obstetrics, Dr. W. T. Sarles.
Myomectomies, Dr. A. J. Puls.
Observations on Seventy Recently Performed Laparotomies, Dr. F. B. Robinson.
Complications in Abdominal Surgery, Dr. A. J. Burgess.
Perineal Repair, Dr. P. O'Keefe.
Strophanthus, Dr. D. Mereness.
The Use of Heart and Respiratory Stimulants in Anesthesia, Dr. M. H. Fisk.
The Use of Heart Tonics and Stimulants in Acute Febrile Diseases, Dr. C. M. Gould.
The Treatment of Malignant Diphtheria, Dr. S. P. Deahofe.
Belladonna, Dr. S. B. Sperry.
House Disinfection, Dr. O. T. Hougen.
The Duty of the State Toward the Inebriate, Dr. R. M. Wigginton.
Hygiene of Villages, Dr. L. H. Pelton.
Heredity and the Wards of the State, Dr. E. H. Townsend.
Five Minutes With the Typhoid Bacillus, Dr. F. J. Tower.
Provision for the Insane Awaiting Commitment, Dr. M. J. White.
Functional Nervous Diseases, Dr. Irving D. Wiltrout.
Treatment of Epilepsy, Dr. W. F. Wegge.
Report of Two Cases of Unusual Parasitic Intestinal Disease, Dr. E. F. Woods.
Stomach Catarrh and Stomach Lavage, Dr. A. F. Heising.
Broncho-Pneumonia in Children, Dr. J. Noer.
Catarrhal Pneumonia, Dr. Julia P. Kelley.
Cerebral Signs and Simulations in Pneumonia, Dr. J. R. Barnett.
Gouty Deposits of the Testicle, Dr. F. J. Tower.
Infantile Cynosis From Bismuth Poisoning, Dr. A. S. Maxson.
Treatment of Opium Poisoning, Dr. W. H. Hulburt.

It may not be practicable to follow the program in the order of time as given above, and precedence in the reading of papers will be given to members of Standing Committees.

Communications relating to any changes in the provisional program should be addressed to Chairman of Program Committee, Dr. W. H. Washburn, *prior to April 23.*

W. H. WASHBURN, Chairman Program Committee.
U. O. B. WINGATE, Anniversary Chairman.
ERNEST COPELAND,
J. R. MCDILL,
H. P. WENZEL,
Committee of Arrangements.

B. C. BRETT, President,
CHARLES S. SHELDON, General Secretary.

BOOK NOTICES.

A Manual of Therapeutics. By A. A. STEVENS, A.M., M.D. 16 mo. cl. pp. 435. Philadelphia: W. B. Saunders. 1894. Price $2.25.

This Manual has been prepared for students, and is a concise abridgement of the greater treatises, but the author uses the old English system of weights and measures throughout instead of the modern decimal system, even in the dose table at the end of the book; an unfortunate thing for a book that aspires to be in harmony with recent text-books. Many of the unofficial drugs are briefly commented on, and with the exception noted the book is an excellent one of its kind.

Syllabus of the Obstetrical Lectures in the Medical Department of the University of Pennsylvania. By RICHARD C. NORRIS, A.M., M.D., Demonstrator of Obstetrics, University of Pennsylvania, etc. Third edition. Philadelphia: W. B. Saunders. 1894. Price $2.00.

The popularity of this Syllabus is well attested by the fact of its having passed to the third edition. It is one of the most complete of its class. In this edition the changes that have taken place in the University course have been incorporated. The copious index adds to the value of the volume.

Transactions of the third annual meeting of the Association of Military Surgeons of the National Guard of the United States, held at Rush Medical College on August 8, and at the United States Government Building, Jackson Block, August 9 and 10, 1893, Chicago, Illinois. St. Louis: Buxton & Skinner Stationery Company. 1894.

The volume opens with a transcript of the minutes of the meeting, an account of the clinics and entertainments. The papers and addresses read at the meeting then follow. The magnificent historical paper of President Senn on "Enterorrhaphy" (published at the time in this JOURNAL), will always give a permanent value to this volume of the Transactions, if there were no other reason. The name of the organization has been changed to the less cumbersome one of "The Association of Military Surgeons of the United States."

Clinical Diagnosis. By ALBERT ABRAMS, M.D. 16 mo. cl. pp. 273. Twenty-eight illustrations. New York: E. B. Treat & Company. 1894. Price $2.75.

This book is a manual of medical diagnosis from a clinical

standpoint and is generally well written, but there is an occasional lapse. On page 110, the following title arrests attention: "The Chemical Analysis of the Stomach as a Means of Diagnosing Gastric Disturbances." On reading the text it is seen that it is the *contents* of the stomach, that are to be analyzed, and not that organ itself as the title states. The table on bacteriologic diagnosis is excellent, but the directions for demonstrating the presence of bacteria in specimens, is not given at that place but scattered through the volume. The typography is singularly unattractive, but there is much useful information in the work—a jewel which deserves a better setting.

Transactions of the American Orthopedic Association. Seventh Session held at St. Louis, Mo., Sept. 19, 20 and 21, 1893. Vol. VI. Published by the Association. Philadelphia. 1894.

This volume contains the list of officers, list of presidents, honorary members, corresponding members, minutes of the seventh annual meeting; the constitution and by-laws, the President's address and the papers read at the annual meeting.

Most of these papers have been printed in the medical journals and some of them in this JOURNAL. They do not therefore require separate mention. The volume is well printed, amply illustrated and carefully edited. There is, however, no index. A. M. Phelps, M.D., of New York, is President, and John Ridlon, M.D., of Chicago, is Secretary.

An Illustrated Encyclopædic Medical Dictionary: Being a Dictionary of the Technical Terms used by Writers on Medicine and the Collateral Sciences, in the Latin, English, French and German languages. By FRANK P. FOSTER, M.D. Vol. IV. Illustrated. Pp. 775. New York: D. Appleton & Company. 1894.

This magnificent Dictionary is now completed with the volume under consideration. We have before mentioned the receipt of former volumes, and commented upon the work. No work approaches it in completeness, and none shows more painstaking labor. The vast research required to collect and define with accuracy the medical terms used in four languages, is something that makes most men shrink from such a task, and it is not likely that the present generation will see another work of this character. The sale is necessarily limited on account of the expensive nature of the book and its extent, and every member of the profession who can afford it should lend encouragement to the publishers by adding it to his collection. No money can be expended to better advantage in enlarging a medical library, than that invested in Foster's Dictionary.

The classical training of the author leads him to great conservatism in the spelling of medical terms, and we fear that those who agreed to the spelling reform at the last annual meeting of the American Medical Editors, will meet with no encouragement in this Dictionary. That reform will come quite surely, but we must remember that the lexicographer's function is not to reform, abbreviate or alter, but to record the existing condition. It is a pleasure to once more refer to the author's remarks on pronunciation: "The Roman method, strange as it may seem to those who are unaccustomed to it, and who now see it for the first time in a medical dictionary, is the one now taught in the leading universities of this country and it will doubtless be adopted everywhere within a very few years." "The value of a dictionary," says the distinguished author, "seems to me to depend upon its accuracy, the convenience of its arrangement, and its comprehensiveness; and in the preparation of this work those qualities have been esteemed in the order in which they are here enumerated." A supplement at the end of the fourth volume contains the words omitted from the preceding volumes.

We congratulate Dr. Foster and his collaborators upon the happy completion of this book, the result of his thirteen years' unremitting labor, and congratulate the medical profession upon the acquisition of this newest and greatest monument to American scholarship.

NECROLOGY.

PETER BOWMAN, M.D., of New York city, April 5.——T. H. Rucker, M.D., formerly of New Albany, died at his home in Evansville, Ind., March 31, aged 79.——B. St. George Tucker, M.D., of Colorado Springs, March 30, aged 55. He was a son of Hon. Beverly Tucker, of Virginia, and a descendant of John Randolph, of Roanoke. He was a surgeon in the Confederate Army.——E. A. Clark, M.D., of San José, Cal., March 30, aged 65. He was a native of Tiffin, Ohio, resided in California since 1850, and had taken an active interest in political as well as medical affairs.——Charles A. Cooper, M.D., of Oil City, Pa., March 26, aged 70.——David Watson, M.D., of Bellefontaine, Iowa, March 31, aged 75.——George A. Watts, M.D., at Tripoli, Iowa, April 9, aged 94.

ON THE DEATH OF DR. RAUCH.—At a meeting of the Philadelphia County Medical Society held March 28, the following resolutions were adopted:

Resolved, That the Philadelphia County Medical Society has heard with great sorrow of the sudden death at Lebanon in this State, of Dr. John H. Rauch, of Chicago, lately Secretary of the Illinois State Board of Health; a man whose interest in the cause of medical education, and whose efforts in increasing the efficiency of the medical profession and maintaining its dignity and honor, have rendered incalculable service to the public.

Resolved, That this resolution be published in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and in the medical journals of Philadelphia.

T. B. SCHNEIDEMAN, Secretary.

PUBLIC HEALTH.

Leprosy in Texas.—A case of leprosy is reported to have been discovered in Dallas, Texas. The patient is a West Indian negro, who claims to have escaped from that country two years ago.

International Sanitary Conference.—Articles of convention were signed by the delegates to the International Sanitary Conference in Paris on the 4th inst., the United States and Great Britain making reservations as to details. A copy of the articles has not yet, April 12, reached this country, but it is claimed that if the decisions of the Conference are carried out they will prove an effectual check to the importation and spread of Asiatic cholera into Europe and thence to the United States.

Typhoid Fever.—The outbreak from typhoid-infected milk at Montclair, N. J., has been clearly traced to a dairy in Verona, where the milk cans were washed in water from a well in close proximity to the vault used by the dairyman's family in which there had been two cases of typhoid fever. Milk from this dairy was also supplied to families in Bloomfield, where eleven cases have occurred besides the sixty cases at Montclair and others at Glen Ridge and Verona—in all a total of some eighty cases up to date. The Verona dairy is quarantined and an inspection is being made of dairies on neighboring farms.

Louisiana State Board of Health.—Governor Foster, of Louisiana, has reappointed Dr. S. R. Oliphant and Mr. S. Odenheimer to succeed themselves as members of the State Board of Health. Dr. Oliphant will probably be reëlected President at the annual meeting, which takes place on the 12th inst. Dr. Lucien F. Salomon, who has for many years

acceptably filled the office of Secretary of the Board, will not accept a reëlection, his practice requiring more attention than is compatible with the duties of the office. Dr. Salomon's retirement is a distinct loss to sanitary interests in the South.

Asiatic Cholera.—Cholera of a virulent type was reported, April 5, to be "raging" in Czenstochov, a place of about 5,000 inhabitants on the Prussian frontier of Poland. The town has been quarantined.

The disease is reported, April 9, to be rapidly spreading in Constantinople, having extended from the poorer and more congested districts, to which it was at first confined, to portions of the city where the better classes live. Councillor Calliadi Bey and a servant of one of the members of the Greek legation died on the 8th inst., after an illness of only a few hours in each case. The Greek legation has been since removed and other foreign representatives are seeking temporary refuge outside the city. It was the Greek government which first announced, March 23, the existence of cholera in Constantinople.

The Smallpox Situation.—Smallpox continued to increase up to the close of March, but with the approach of warm weather it is probable that it has reached its height for the present season. New points of infection, developed since the close of Dr. Rauch's summary, and new cases in the then infected localities, have been reported as follows:

MASSACHUSETTS—In South Boston, where the disease was believed to have been "stamped out" in February, there were found four cases, March 20, and a fifth on the following day. In Springfield, March 20, "patients in the pesthouse appear to be doing well"; this is the first intimation received of smallpox at Springfield.

NEW YORK—In New York city from four to ten new cases a day are reported; on the 18th a case was removed from a house where four other cases had occurred since March 13; on the 20th a case was found among 100 boys confined in the House of Refuge; on the 22d a family, quarantined for refusing to submit to vaccination, escaped by cutting a hole through the party wall of their flat; on the 25th a policeman was found ill with the disease—judging by newspaper comments on this case it would appear that the New York police force is not vaccinated; on the 26th a cook in a fashionable bachelor's apartment house, who had been treated for a week in the house for malarial fever, was sent to a hospital by an ambulance surgeon who diagnosed his disease as typhoid fever; at the hospital he was found to be in the eruptive stage of smallpox; on the 29th, eleven cases were found in a large crowded, double tenement house in Harlem; one was dying and two others died during removal; April 4, Dr. Balch, Secretary of the State Board of Health, reports ninety-one cases with twenty deaths in New York city, during the week ended March 31; April 8, the steamer, *Obdam*, from Rotterdam, was taken in charge at quarantine with one case of smallpox on board.

In Brooklyn smallpox was declared epidemic by Health Commissioner Emery, March 26; there were eighty cases reported in January and sixty-five in February; the spread of the disease is attributed to neglect of vaccination and the concealment of cases by parents and physicians; vigorous efforts are being made to suppress the outbreak and the State is cooperating; tents furnished by Gov. Flower are used for the overflow from the crowded pesthouse; April 4, Dr. Balch, Secretary of the State Board of Health, reports 167 cases with 20 deaths in Brooklyn during March. At Utica, a new case occurred on the 26th. Cases were reported on the 19th at Manchester, Walworth and Palmyra, villages in the suburbs of Rochester. Cases were reported at Geneva and Ithaca on the 20th. A case was reported on the 23d at Mt. Vernon.

NEW JERSEY.—Another case was found in Hoboken on the 29th, after it was believed that the disease had been suppressed.

PENNSYLVANIA.—On the 23d the local board of health at Danville issued a proclamation declaring smallpox to be epidemic at that place and ordering schools and places of amusement to be closed. The usual local excitement followed, with villification of the board and its action, but the board was sustained by Dr. Atkinson, President of the State Board of Health, who visited Danville on the 28th and expressed great surprise that the Danville physicians let the epidemic get such headway while they were quibbling about names—whether a disease which was spreading day by day and causing numerous deaths should be called smallpox or chickenpox." Early in March the corpse of a child was taken from Danville, where the physicians were disputing over smallpox and chickenpox, to Lewisburg by the father for burial; on the 20th the father was taken down with smallpox. On the 28th, "for the first time in a number of years," a case of smallpox was found in Harrisburg; the patient had just returned from Bridgeport, Conn., and was sick on his arrival. Another case was reported in Pittsburg on the 27th, after it was believed the disease had been "stamped out;" the patient had never been vaccinated; seventeen cases in hospital April 4.

ILLINOIS.—In Chicago the disease continued to spread without abatement during the month; the total number of cases reported during March was 305; cases having developed in the Cook County Hospital, wards 17 and 26 were put in quarantine; April 9, a prisoner at the Harrison Street police station died of hemorrhagic smallpox in his cell; 108 new cases were removed to the pesthouse during the first ten days of April; smallpox corpses were discovered by the inspectors; April 6 one, April 9 two, April 10 one.—March 26 a case was reported at Alton, Madison County, a tramp.—On the 27th, one case and one "suspect" at Hoopeston, Vermilion County.—On the 29th, one case at Greenbush, Warren County, supposed to have been contracted from tramps from Joliet; April 4 three new cases developed in this family.—April 2, two cases reported at Maywood, Cook County, contracted in Chicago.—April 5, two cases in the Grundy County poorhouse, origin, a tramp, supposed to have chickenpox, discharged April 2, before the true nature of his disease was detected.—April 5, one case in Freeport, Winnebago County.

SMALLPOX was discovered March 24 among seventy-seven Chinese detained in the bonded warehouse at Vancouver, B. C., destined for Portland, Seattle, San Francisco, New York and other points in the United States.

Solid Sanitary Gains from the World's Fair.—The following paragraphs are taken from an article in the *Independent*, reviewing in a sanitary way the results of the Fair at Chicago. The article opens with a statement as to the prevalence of typhoid fever in that city before the Fair began. The writer shows that in 1891 there was an average daily mortality of 54, chiefly young lives. This vital drain was serious, and a betterment was observed in 1892 as a result of some sanitary attempts as to water supply and sewerage, especially the former. "At the outset the daily press of the city in blind devotion to the supposed 'interests' of the city, studiously ignored the frightful facts; but the Health Board and the medical periodicals refused to be hoodwinked, and would not keep silence. They stated that in 1891 the percentage of typhoid deaths was 16.6 in 10,000, making a total of 1,997 (only three short of 2,000), and each death is justly presumed to represent ten cases which recover. It is no wonder that cautious people hesitated before planning to visit the Fair. Nobody doubted that the cause of the trouble was a polluted water supply. The London *Lancet* sent forth competent envoys to make a thorough, impartial, scientific investigation, and no doubt their report influenced many Englishmen to remain away. Matters had considerably mended in 1892, but then the mortality rate was equal to that of Philadelphia in the Centen-

nial year—it had fallen to 6.74, while in Philadelphia it was 2.22; Boston, 1.22; New York only .90; Brooklyn, .80; London .49, and in Berlin .42; these last two cities use only filtered water. It will perhaps present a more vivid picture, if we say that in the month of January, 1892, there were 311 deaths from typhoid in Chicago, and in the much more compact city of Brooklyn but 8. In May of the year 1891 half as many people died, as in the whole State of Massachusetts during the entire twelve months of the year; two-thirds as many as died in London with its 4,000,000 of people, in the entire previous year.

In Dr. John H. Rauch, Chicago has had for years a fearless and aggressive sanitarian, whose *fiat-justitia-ruat-cælum* ideas have impressed themselves on an able and energetic set of younger men, who dared to know the worst, to show the worst, and to push forward remedial measures, and then to show to all the world as far as possible, what intelligently directed effort had accomplished.

Profs. William T. Sedgewick and Allen Hazen, of the Massachusetts Institute of Technology, had prepared a paper for the American Statistical Association called "Statistics of Typhoid Fever in Chicago," accompanied by a diagram showing at a glance the bad eminence of Chicago when compared with Philadelphia, Boston, New York and London. Every once in a little distance the line that represented that city shot up into one of those sharp peaks that tell the practiced eye that things are going badly, and the peak for 1890-'91 went many squares above the worst that had ever been known before, even in Chicago. The paper and diagram made an incisive impression far and wide, and the Secretary of the Illinois State Board of Health called a conference, at which the city, the Sanitary Department and the canal authorities—these being the parties in interest—were represented; and Dr. Reilly pointed out the coincidence between heavy rainfalls that flush out the sewage from the canal into the lake and a rapid rise in the death rate, and he also indicated the only remedy then possible—a greater pumping power; but "nothing of practical value" resulted from this conference, and it is only charitable to suppose that the explanation of what seems a criminal apathy was in the fact that the four-mile tunnel was then in process of construction and would soon be finished, and other tunnels were in process of extension.

Toward the end of 1892 it became possible to shut off the most polluted of the water intakes and begin using the extended tunnels, so that December of 1892 shows 47 deaths from typhoid against 311 in January. On May 1, 1893, the four-mile tunnel was completed; and when the American Public Health Association held its meeting in October it was found that, reckoning from Sept. 30, 1892, to Sept. 30, 1893, the mortality had gone down to a percentage of 2.64 as against 6.72 for the year before, and part of this time the old dangerous intakes were in use. The figures told their own story, and the State Board of Health of Illinois evolved a most instructive "exhibit" from this and other experiences; so that maps, charts, diagrams and statistics demonstrated conclusively that it must have been the bad water that caused the great destruction of life originally; for it was confined to no locality, and was but little aggravated in the overcrowded sections, and the amendment was equally universal.

The ventilation of the subject previous to the Fair put everybody on his guard; the Fair managers became alarmed and welcomed the "piping" of a pure supply on to the grounds from twenty-five miles away, and the principal hotels distilled their drinking and cooking water; but, in spite of all, we hear that a considerable number of people had the fever after returning from Chicago.

Somber as the picture is, it has its bright, redeeming side; everybody's attention was arrested, the eminently practical Chicagoans began to study, not only pure water supply but every phase of sanitation. They saw how innocuously all the wastes of the Fair were disposed of. Especially the women came and saw, and forthwith began to conquer. They organized sanitary associations in every part of the city, whose duty was to cleanse some special district; they mounted one of the smokeless crematories on wheels, and showed how the garbage could be destroyed without offense, by just destroying it; and now we learn that the municipal authorities have five of them at work. The whole community has been educated by the sanitary necessities of the situation. The women have been wakened, and there need be no fear that they will relax their demands for pure air and pure water, and these will be echoed all over the land by intelligent women. Score one for the solid benefits conferred by the Fair.

MISCELLANY.

Hospital Notes.

Bids have been opened for the erection of a new pathological building on the City Hospital grounds of Boston, Mass.

At the monthly meeting of the Board of Directors of the Pennsylvania Hospital, the resignation of Dr. W. H. Harrison, assistant physician of the department for insane men, was received and accepted. Dr. Horace Phillips, an ex-resident physician, was elected to succeed him.

The dedication of the new hospital in Newcastle, Ohio, took place April 3.

The annual meeting of the medical staff of Saginaw Hospital was held April 4. The election resulted in choice of Dr. W. C. Conroy, President, and Dr. W. S. Connery, Secretary.

Medical College Notes.

The Amphitheater of the new medical building of the Tulane University in New Orleans was destroyed by fire March 31. The loss will not exceed $12,000.

The Southern Medical College of Atlanta, Ga., held its annual commencement April 2, and awarded diplomas to forty-two graduates.

The Miami Medical College (Cincinnati) held its annual commencement April 4, and awarded diplomas to twenty-two graduates.

The McGill University of Montreal, Quebec, held its commencement exercises April 5. Fifty-five graduates received the degree of M.D.

The fifteenth annual commencement of the St. Louis College of Medicine was held March 27. Twenty graduates were awarded diplomas.

The fourth annual commencement of the Kansas Medical College (Topeka) was held March 28. There were seven graduates.

The Medical College of Indiana, at Indianapolis, held its twenty-fourth annual commencement March 26, and awarded diplomas to fifty-two graduates.

The Woman's Medical College of Cincinnati held its commencement exercises April 2. Fifteen received the degree of M.D.

At the thirteenth annual commencement of the Omaha Medical College seventeen graduates received their diplomas.

The Annual Commencement of the medical department of the University of Oregon (Portland,) was held April 2. There were fourteen graduates.

Not in "Good Standing."—As a result of its investigations of the St. Joseph medical colleges the Missouri State Board of Health has declared the Northwestern Medical College to be not "in good standing," and has refused to recognize the diplomas recently issued to the graduating class of fourteen. If these young gentlemen desire to practice in Missouri they must pass a satisfactory examination before the Board. Among the reasons given for "slating" the College is the want of proper laboratory facilities for instruction in chemistry and bacteriology.

Evidence of Preliminary Education.—At the January meeting of the Illinois State Board of Health, the rule concerning the evidences of preliminary education, required of applicants for matriculation in colleges of "good standing," was amended so as to read:

2. Diplomas of graduation from a good literary and scientific college or high school, or at least a second-grade teacher's certificate.

The amendment consists in striking out the alternative of an examination by the faculty of the college, and the argument advanced was that such examinations were "too often a farce, very few colleges ever finding an applicant too ignorant to be matriculated."

But now comes Dr. S. J. Talbot, Dean of the Boston Unisity School of Medicine, who points out that there are no second-grade teachers' certificates in New England, and that this action of the Illinois Board seems to "place all Eastern schools, including Harvard as well as our own, in an embarrassing position, inasmuch as, however well educated a man may be after having spent one, two or even three years in a literary and scientific college, if he has not fully completed his course and received a diploma he could not gain admission to any medical college that the Illinois Board would recognize."

This contention gains added force from a recent utterance of Dr. Bowditch, of Harvard, who finds an increasing number of medical students who have left literary and scientific colleges before completing the course, in order to devote more time to the increasing demands of the medical curriculum.

It would seem that the Illinois Board will find it necessary to revise its recent action, and the subject is important enough to receive the attention of the Conference of Examining and Licensing Boards at its forthcoming meeting.

THE MICHIGAN COLLEGE OF MEDICINE AND SURGERY, (Detroit,) held its annual commencement March 29. Addresses were given by Rev. Samuel Plantz and Prof. Edward W Jenks, M.D., L.L.D., of the faculty. Dr. Hal C. Wyman administered the Hippocratic oath and presented the diplomas to twenty-seven graduates. The exercises were followed in the evening by a banquet.

American College of Dental Surgery.—A class of forty-three, including two women, was graduated with the degree of D.D.S., by the American College of Dental Surgery of Chicago, April 2.

Pneumatic Tires for ambulances are being strongly urged by the local health authorities of many cities, on the ground that they will materially reduce the jar, jolting and other injurious effects of these rapidly driven vehicles.

Disposal of Garbage.—New Orleans is trying the experiment of disposing of its garbage by the Simonin process, which consists in the extraction of all fatty matter by treatment with naphtha or gasoline, after which the residue is dried and ground; the products have a commercial value as lubricating oils and fertilizers, and the process is claimed to be free from nuisance in the matter of offensive odors.

The Missouri State Board of Health unanimously passed a resolution which will have the effect of excluding female physicians as assistants at the city institutions. It provides that the assistants at the Female Hospital for the ensuing year be selected from the corps of assistants at the City Hospital, and that it is not expedient to employ female physicians at the City Hospital.

Quacks in Kansas.—County attorneys and local health officers throughout the State of Kansas have been instructed by the State Board of Health to begin an active crusade against the quacks and itinerants, the "disreputable conscienceless medical swindlers," to quote Secretary Dyker's vigorous language, "who have made Kansas their favorite haunt." Prosecutions are to be at once begun against all violators of the medical practice laws, and it is hoped thus to purge the State of its quacks and to relieve the community and the qualified practitioner of their presence.

The "Medicine Man" of Male-Kula, New Hebrides.—A large island, of the name given above, is now being rescued from savagery by missionaries going to that island from Australia. The position of woman is that of a slave and burden-bearer. An evident symbol of male tyranny is the fact that before any female on Male-kula becomes a wife her two upper front teeth are knocked out by the "medicine man," aided by half a dozen old women, who hold the girl's arms and legs while the cruel operation is being performed. This has been done to hundreds of these poor women, giving them a most hideous looking appearance when grinning at a stranger. The tide has now begun to turn, and the meetings for church and school have females in orderly attendance, as well as men and boys, a condition that was formerly quite out of the question.

THE PUBLIC SERVICE.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from March 31, 1894, to April 6 1894.

Capt. EDWARD C. CARTER, Asst. Surgeon, will proceed at once to Ft Spokane, Washington, and report to the commanding officer for temporary duty.

Major CHARLES L. HEIZMANN, Surgeon U. S. A., is granted leave of absence for twenty-one days, to take effect on or about April 14, 1894.

First Lieut. EDWARD L. MUNSON, Asst. Surgeon, will proceed without delay to Camp Merritt, Mont., and report to the commanding officer, for temporary duty at that post.

First Lieut. CHARLES F. KIEFFER, Asst. Surgeon, having reported at Hdqrs. Dept. of Dakota, is assigned to temporary duty at St. Paul, Minn., and will report to the Medical Director of the Dept. for instructions.

First Lieut. HENRY D. SNYDER, Asst. Surgeon, is relieved from duty at Ft. Reno, Oklahoma Ter., and ordered to Ft. DuChesne, Utah, for duty at that post, relieving Capt. SAMUEL Q. ROBINSON, Asst. Surgeon. Capt. ROBINSON, on being relieved by Lieut. SNYDER, will report in person to the commanding officer, Davids Island, New York, for duty at that post.

Major PETER J. A. CLEARY, Surgeon, will be relieved from duty at Ft. McPherson, Ga., by the commanding officer of that post, on the receipt by him of this order, and will report in person to the commanding officer, Ft. Custer, Mont., for duty at that post.

The following named officers are detailed to represent the Medical Department of the Army as delegates to the Association of Military Surgeons of the United States, to meet in Washington May 1, 1894: Lieut.-Col. WILLIAM H. FORWOOD, Deputy Surgeon-General; Major ROBERT M. O'REILLY, Surgeon; Major JOSEPH K. CORSON, Surgeon; Major WALTER REED, Surgeon; Capt. JOHN L. PHILLIPS, Asst. Surgeon; Capt. G. L. EDIE, Asst. Surgeon.

LETTERS RECEIVED.

(A) Andrews, Edmund, Chicago, Ill.; Allen, J. B., Hagerstown, Ind.; Ashmead, A. S., New York, N. Y.; Appleton, D. & Co., New York, N. Y.; Anderson, O. C., Andover. Ill.

(B) Baker, L. H., Oak Park, Ill.; Baker, Henry B., West Baden, Ind.; Beatty, R. C., Lebanon, Mo.; Bremer, L., St. Louis, Mo.; Bell, Guido, Indianapolis, Ind.; Baker, A. R., (2) Cleveland, Ohio; Buck, H. A., Vincennes, Ind.; Blakiston, P. Son & Co., Philadelphia, Pa.; Burch, J. D., Aurora, Texas; Bond, R. C., Aurora, Ind.; Bausman, A. B., Chicago, Ill.

(C) Codman & Shurtleff, Boston, Mass.; Cutter, J. A., New York, N. Y.; Castle, Wilmot & Co., Rochester, N. Y.

(D) Doliber-Goodale & Co., Boston, Mass.; Dal, J. W., Chicago, Ill.

(E) Ely, J. S., Barnesville, Ohio; Evans, Geo. W., Washington, D. C.; Ellis, P. V., Marshalltown, Iowa.

(F) Fernandez, A. M., New York, N. Y.; Fletcher, M. H., Cincinnati, Ohio; Fairbank, H. C., Flint, Mich.; Frank, Louis, Milwaukee, Wis.; Foster, C. W., Woodfords, Me.

(G) Gihon, A., Washington, D. C.; Garcelon, Alonzo, Lewiston, Me.; Goldspohn, A., Chicago, Ill.

(H) Howle, W. P., Oran, Mo.; Holton, Henry D., Brattleboro, Vt.; Hanson, A. H., Chicago, Ill.; Hummel, A. L., (4) Philadelphia, Pa.; Hanson, Z. P., Chicago, Ill.; Howe, H. H., Weston, Vt.; Howard, R. C., Durant, Miss.

(J) Jennings, C. G., Detroit, Mich.; Jones, Wm. Torrence, Keysville, Ga.; Jelks, James T., Hot Springs, Ark.

(K) Kerrick, H. C., Brockton, Ill.; Kelly, C. W., Louisville, Ky.; Kinnaman, A. S., Cleveland, Ohio; Kennedy, T. C., Shelbyville, Ind.

(L) Listol Chemical Co., Chicago, Ill.; Lüke, Dr., Koenigsberg, Germany.

(M) Marshall Printing Co., Marshalltown, Iowa; McGuire, F. C., Washington, D. C.; Magoffin, M. M., Mercer, Pa.; Mallory, C. H. & Co., New York, N. Y.; McCormick, H. G., Williamsport, Pa.; Merrill, J. C., Washington, D. C.

(N) New York Post-Graduate Medical School, New York, N. Y.

(P) Phenique Chemical Co., (2) St. Louis, Mo.; Pelton, E. R., New York, N. Y.; Phillips Brothers, Brothers. Springfield, Ill.; Phelps, R. H., Syracuse, N. Y.; Perpoena Chemical Co., New York, N. Y.; Phillips, E. L., Galesburg, Ill.; Posman, A., Paducah, Ky.

(R) Reed, A. A., Boston, Mass.

(S) Schieffelin, W. H. & Co., New York, N. Y.; Sultan Drug Co., St. Louis, Mo.; Stearns, Frederic & Co., Detroit, Mich.; Steiger, E. & Co., New York, N. Y.; Sternberg, Geo. M., Washington, D. C.; Subscription News Co., Chicago, Ill.; Smith, Prescott, Cincinnati, Ohio; Smith, A. R. G., North Whitefield, Maine.

(T) Townsend, H. C., St. Louis, Mo.; The Daggett Table Co., Buffalo, N. Y.; The S. R. Niles Newspaper Advertising Agency, Boston, Mass.; Topliff, C. L., New York, N. Y.; The Maltine Mfg. Co., New York, N. Y.; Tuley, H. E., Louisville, Ky.

(W) West Baden Spring Co., West Baden, Ind.; White, J. A., Richmond, Va.; Wimmer, S. J., St. Mary's, Pa.; Westermann, B. & Co., New York, N. Y.; Willard, Lee M., Merrill, Wis.; Werder, X. O., Pittsburg, Pa.; Woodbridge, J. E., Youngstown, Ohio.